

The CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA



Volume XXXIV

DECEMBER 1952

Number 12

○ BUILDINGS

○ HIGHWAYS

○ AIRPORTS

○ RAILROADS

PUBLIC WORKS

NEW CONSTRUCTION
(Billions of Dollars)
CUMULATIVE

1952

1951

F M A M J J A S O N D



Another Record Volume Forecast for 1953-54

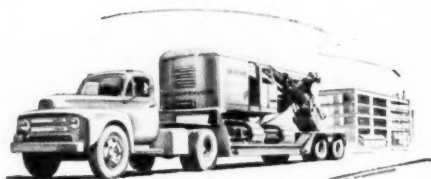
Bond Issue Veto Shows Public Works Need-23

**QUALITY . . . from
raw material to finished axle,
means lower-cost hauling**



Exacting standards of quality, maintained by the most advanced quality control procedures, combine with the Eaton design to produce axles which are setting unequalled performance records at minimum cost per mile. Quality, plus Eaton's exclusive planetary gearing, forced-flow lubricating system, and positive shift control, keep Eaton 2-speeds on the job, out of the repair shop.

Let your dealer explain how Eaton 2-speeds provide the right ratio for every road and load, cut maintenance cost, make trucks last longer—and worth more on the trade-in.



EATON
2-Speed Truck
AXLES

Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO



Today, America's roads are crowded with twice the traffic they were designed to carry. Help end the national traffic jam by speaking up for more and better roads.

MONEY SAVER

on rock-ridden jobs

You know what it takes to make every hour of every working day count — but BIG. That's where Goodyear's super-tough Hard Rock Lug stays right with you!

It stands the gaff because that's what Goodyear builds it for! Its massive lug-bars shrug off bruising rocks, resist tire-killing snags. It gives you *full-pull* on the toughest terrain that ever jinxed a job!

So why let troublesome tires eat up your profits? That rugged muscleman — the Hard Rock Lug, by Goodyear — is job-insurance!



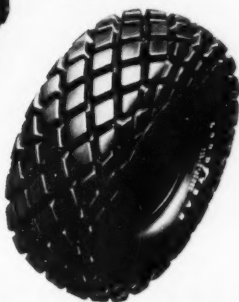
SURE-GRIP

in name and action! Drive-wheel traction champ for graders and scrapers.



ALL-WEATHER

— finest for flotation, rolling big loads faster.



HARD ROCK LUG

— super-tough champ for all kinds of rock work.

*FOR EACH JOB,
THERE'S A COST-CUTTING
GOODYEAR TIRE!*

All-Weather, Sure-Grip—T.M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio

GOOD YEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network

Main Street Merchant

The Golden Rule Store in Kemmerer, Wyoming, where J. C. Penney started his business in 1902. Now, fifty years and some 1624 stores later, comes Penney's beautiful new store, on Monument Circle, in Indianapolis.



*J. C. Penney's Great, New Indianapolis Store
Gives Concrete Expression to Principles which
Built an Ideal into a Billion Dollar Business*

Clearly, J. C. Penney meant it when he called his first store The Golden Rule, for he and his associates have built that precept into a nation-wide institution, with 1624 stores and over a billion dollars annual volume. One of the newest in the Penney chain is this handsome Indianapolis store, on Monument Circle, the hub of the world's largest city not on navigable water.

The durable, fire-safe character of the building's concrete construction is as staunch as the business it houses. Hailed as a fine example of modern

architecture, this new \$6-million building, with 182,000 sq. ft. of total area on three floors, is windowless and completely air-conditioned. Counter and display arrangements also strike a new note in design.

Here is a structure well expressing the traditions of quality, value and friendly service which are distinguishing attributes of the business it houses, as indeed they are of the company which produced the 25,000 barrels of Lone Star Cement that went into this construction.

J. C. PENNEY COMPANY BUILDING, Indianapolis, Indiana
Built and owned by: **EQUITABLE LIFE ASSURANCE SOCIETY OF THE U. S.**

Architects:
SKIDMORE, OWINGS & MERRILL, New York, Chicago, San Francisco
Contractors:
Substructure: **CARL M. GEUPEL CONSTRUCTION CO., Indianapolis**
Superstructure: **FRANK MESSER & SONS, INC., Cincinnati**
Masonry: **LEON JOYCE, Indianapolis**
Cement requirements, all Lone Star:
Substructure: **READY MIXED CONCRETE CORPORATION**
Superstructure: **CARLSEN CONCRETE SUPPLY**
Wall and Partition Units: **CINDER BLOCK & MATERIAL CO.**
Masonry: **H. W. LIMBURY BRICK & TILE CO.**
—all of Indianapolis, Indiana



LONE STAR CEMENTS COVER
THE ENTIRE CONSTRUCTION FIELD

LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N. Y. • BETHLEHEM, PA. • BIRMINGHAM
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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST
CEMENT PRODUCERS: 17 MODERN MILLS, 125,600,000 SACKS ANNUAL CAPACITY

The CONSTRUCTOR

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RAILROADS • PUBLIC WORKS

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COVER

In the shadow of the Capitol dome, workmen erect temporary stands for the presidential inauguration ceremonies next month. The project, costing \$100,000 and seating 15,000 people, takes up about half of the space in the Capitol Plaza. General contractors are Skinker & Garrett, A.G.C., Washington, D. C. (Washington *Star* Photo)

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C.I.T. CORPORATION
Industrial Financing

ONE PARK AVENUE, NEW YORK 10, N. Y.

S. D. MADDOCK
PRESIDENT

December, 1952

Dear Mr. Contractor:

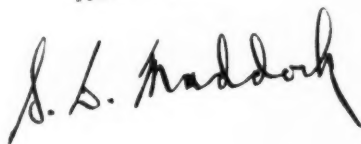
All of us are interested in results, particularly when they benefit us individually. C.I.T. Corporation has the flexible finance plans that will get results for you... whether you need funds for additional working capital, or a method of paying for the purchase of new equipment.

Here are four reasons why you will benefit by using the C.I.T. Corporation finance plans:

- (1) You secure the profit making equipment that you need now—
- (2) You keep your present working capital available for operating expense—
- (3) You use short term borrowing lines for current needs rather than for equipment purchases—
- (4) Your present equipment can form the basis for loans.

When your needs are for financing up to 36 months, you can benefit by using C.I.T. Corporation finance plans and get the desirable results that you want. Get in touch with any one of our offices... they understand the financing needs of the construction industry.

Yours truly,



NEW YORK, NEW YORK • CHICAGO, ILLINOIS • CLEVELAND, OHIO • ATLANTA, GEORGIA • HOUSTON, TEXAS
LOS ANGELES, CALIFORNIA • SAN FRANCISCO, CALIFORNIA • PORTLAND, OREGON • MEMPHIS, TENNESSEE

New construction for 1953 is estimated to reach a new peak, perhaps topping by about \$1 billion the \$32.3 billion expected to be put into place this year, the Bureau of Labor Statistics and Department of Commerce jointly announced last month. Some expansion is likely in both public and private construction. This record activity next year assumes that business generally will remain good, buoyed in part by stepped-up defense expenditures, at least for the first part of the year. (Page 21)

Demand for public works swept across the nation last month when voters approved a record volume of about \$1 billion in bond issues, the majority of which will be for construction. Also, other types of authorizations will provide other millions of dollars worth of building in the future. Public determination was expressed to improve and expand the nation's highway system by many states, especially New Jersey which approved the proposed \$285 million Garden State Parkway toll road. Three other states voted amendments banning diversion of highway funds. (Page 22)

Some major national legislation now on the books may be due for a reversal at the hands of the 83rd Congress which convenes Jan. 3, and President-elect Eisenhower is expected to have even stronger Senate support on most major issues than the Truman opposition that was so evident in the past years. These are the conclusions of a recent study by the authoritative *Congressional Quarterly*, based on past voting records of returning Congressmen and views of new members. (Page 23)

Heavy construction equipment, tractors, bulldozers, shovels and other types should about equal demand sometime next year, according to NPA estimates. With the lessening of military combat requirements for this type machinery after June 1953, "it now appears that . . . production and demand for heavy construction machinery will be in better balance than at any time since 1950."

Electrical contractors shun A.G.C. plan to establish a joint committee which could "sit down in an atmosphere of mutual respect and understanding and start to work on a satis-

factory course of action leading to more harmonious relationships between general contractors and electrical contractors." During the past session of Congress the National Electrical Contractors Association pressed vigorously for passage of S. 2907, to require general contractors to name subcontractors and their prices in bids on federal projects. (Page 27)

Highway funds totalling \$575 million apportioned to states and territories, the Bureau of Public Roads announced last month. The money, authorized as 1953 federal aid to highways, included \$247.5 million for projects in the primary system, \$165 million for the secondary system and \$137.5 million for the urban areas. (Page 41)

Apprentice program better stabilized by the present deferment policy, coupled with the G.I. Bill for Korean veterans, W. F. Patterson, director of the Bureau of Apprenticeship announced at an Evansville (Ind.) building trades meeting recently. He also hinted that enough apprentices may be available to bring their number up to the quota needed for the foreseeable future. (Page 51)

Construction accidents fewer but more severe last year than in 1950 the Bureau of Labor Statistics reported. For the same period, manufacturing industries showed a slight increase in number as well as severity of accidents. (Page 53)

New equipment and repair parts are available in more adequate supplies to contractors now compared to a year ago but there is no oversupply. This was revealed by discussion at separate meetings of the joint cooperative committees which the A.G.C. maintains with the Construction Industry Manufacturers Association and the Associated Equipment Distributors which met in Chicago on Nov. 7. (Page 30)

Lieut. Gen. Lewis A. Pick, chief of the Corps of Engineers since 1949, retired Nov. 30 after 36 years in the Army where he built up a reputation as a man who "gets things done." Replacing Gen. Pick is Maj. Gen. Samuel D. Strugis, Jr., commanding general of the Communications Zone, U. S. Army, Europe, who will take over his new post as soon as he can

close out business in his present command. (Page 21)

Port of New York Authority expects to spend \$550 million in the next 10 years to keep pace with stepped-up usage of its bridges, tunnels, airports, piers and inland terminals, the bi-state agency reports. The authority expects to be in the markets at least once yearly with consolidated bonds to help finance the expansion.

St. Lawrence Seaway will have a staunch friend in the 83rd Congress next year if Rep. George A. Dondero (R., Mich.) heads the House Public Works Committee as is expected. Rep. Dondero still has hope that Congress will permit the U.S. to join Canada in building the seaway and he said recently that if there appears to be any chance of getting favorable legislation through the new Congress he will press his committee for action.

New "disputes clause" for use in defense fixed-price construction contracts, which permits review by the courts of contracting officers' decisions which are found to be "fraudulent, arbitrary, capricious, or so grossly erroneous as necessarily to imply bad faith," was issued last month by the Defense Department in the *Federal Register*. The revision was issued with concurrence of the General Services Administration which has been working with federal construction agencies on a revision of the standard government construction contract Form 23—including the disputes clause, Article 15. (Page 23)

New Public Works Construction Subcommittee proposed by the U.S. Chamber of Commerce to replace its Joint Subcommittee on Highway Transportation and Communication. The new group will develop a policy statement "setting forth the essential role of public works construction in a progressive and dynamic economy, including . . . determining needs for public works construction and in getting such construction scheduled and financed." The chairman of the Construction and Civic Development Committee also recommended that the new subcommittee be so constituted as to give full consideration to the thinking of other departments in the chamber. (Page 24)

TO BLUEPRINT SPECIFICATIONS



NO MATTER WHAT TYPE DITCH IT IS, the Gradall will dig it with the accuracy of hand labor—but at much less cost!

By power hydraulics, the Gradall exerts a positive down pressure, rather than depending upon the weight of the bucket for its cutting action. And its "arm-action" boom twists and turns to cut slopes at any desired angle—to work easily around obstacles. Its mount permits a 360° swing to load or waste spoil. And many standard and special tools can be easily interchanged in a matter of minutes.

Gradall



YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for November stands at Index Number 398, according to the A.G.C. Index. The cost figure for November 1951 was 378. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 554 for November. One year ago the average stood at 509. The average prices paid by contractors for basic construction materials for November stand at

Index Number 294. The average a year ago stood at 292. The 1913 average, again, equals 100.

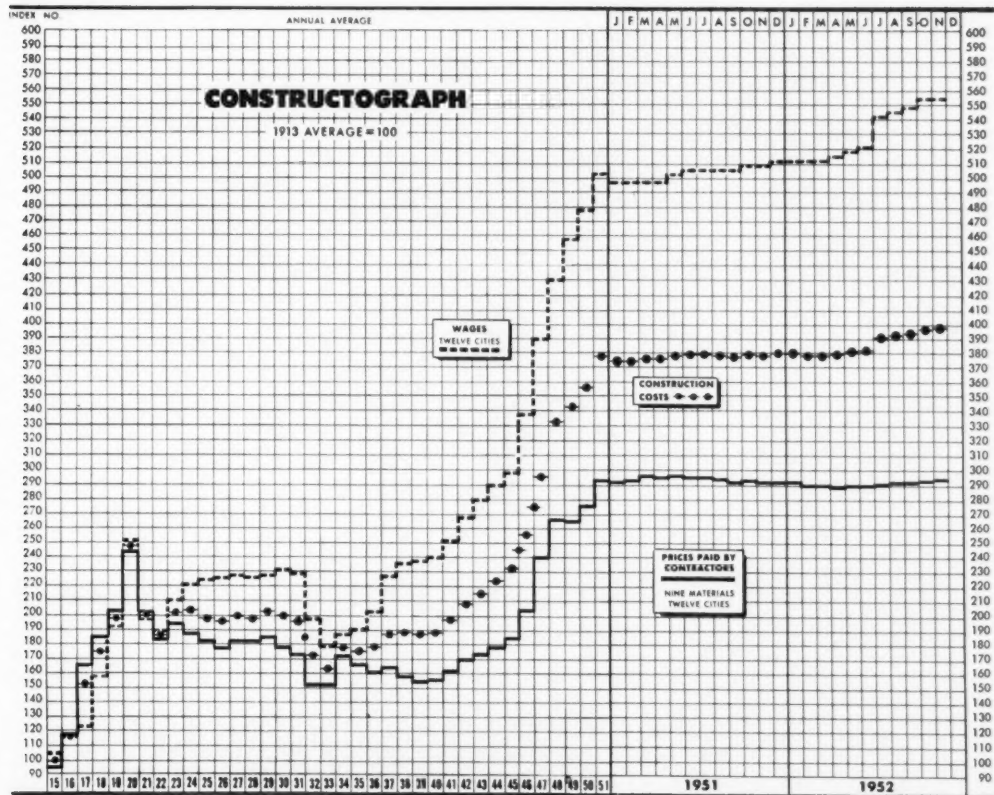
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during October (Index Number 249, based on 1936-1938) is a decrease of 144 points from September and an increase of 39 points from October 1951. (F. W. Dodge Corp.)

REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 47 weeks of 1952 totaled 34,641,821 cars. For the same period in 1951, loadings amounted to 36,977,312 cars. This represents a decrease of 6.3%.

● Wage, Material Price and Construction Cost Trends



INSULATED

METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS
ALUMINUM, STAINLESS or GALVANIZED STEEL

Insulated Metal Walls continue to gain favor with both Architects and Owners throughout the country. And, the reason is obvious . . . these modern walls have revised previous concepts of permanent, firesafe construction. Their lower cost, in both material and labor, and the reduction in construction time—plus the fact that Insulated Metal Walls can be erected under weather conditions which would preclude masonry construction, are just a few of the advantages. Insulated Metal Walls also lend themselves to individual architectural expression in design—the powerhouse illustrated here is a good example. In this building, vertical panels of continuous sash in combination with a Mahon Fluted Metal Wall produces a striking appearance. Mahon Insulated Metal Walls are available in the three patterns shown below. The Mahon "Field Constructed" Fluted or Ribbed wall can be erected up to sixty feet in height without horizontal joints—a feature which is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information and Specifications, or write for Catalog No. B-53-B.

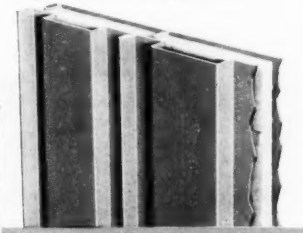
THE R. C. MAHON COMPANY

Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

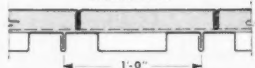
Manufacturers of Insulated Metal Walls; Steel Deck for Roofs, Partitions and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.



In the Powerhouse above, the Insulated Metal Walls up to the first eave line are constructed without a horizontal joint. Continuous Exterior Wall Panels 56'-10" long were employed in these wall areas.



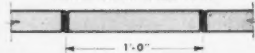
FLUTED WALL



RIBBED WALL



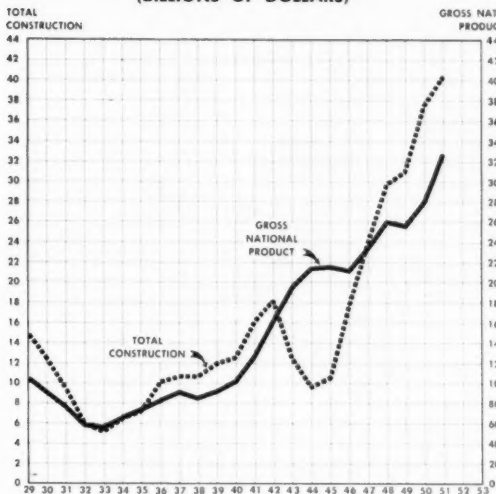
PREFAB FLUSH PANEL WALL



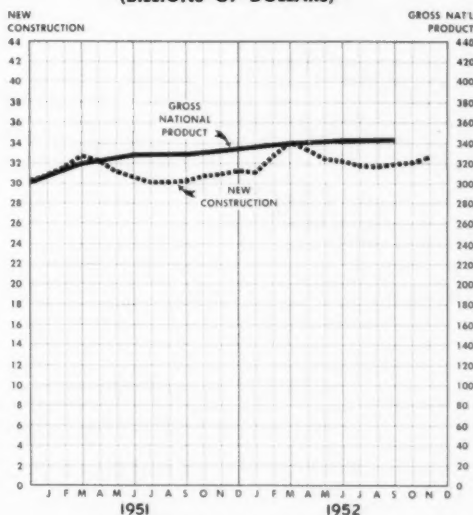
The Over-all "U" Factor of the various Types of Mahon Insulated Metal Walls is Equivalent to or Better than a Conventional sixteen inch Masonry Wall.

MAHON

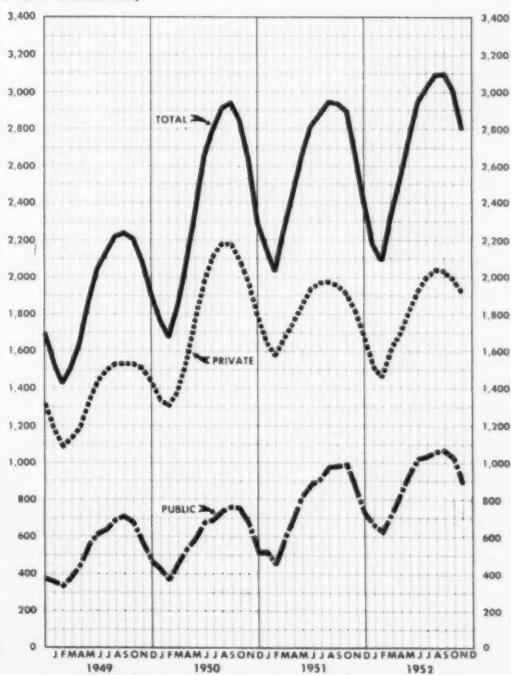
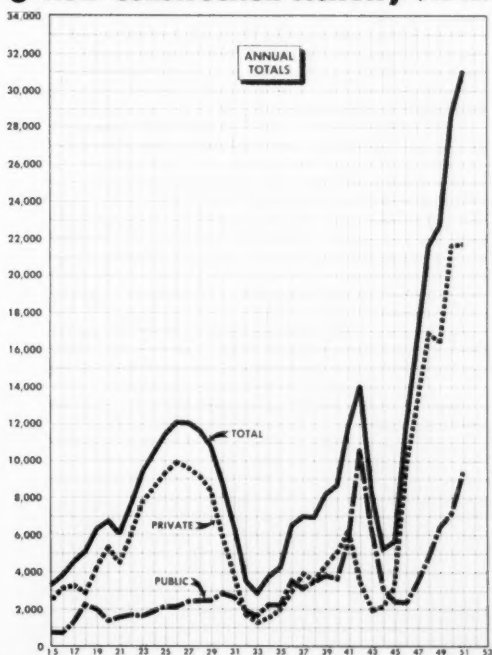
● **TOTAL Construction compared with Gross National Product**
(BILLIONS OF DOLLARS)



● **NEW Construction Compared with Gross National Product***
(BILLIONS OF DOLLARS)



● **New Construction Activity (MILLIONS OF DOLLARS)**



DATA SUPPLIED BY DEPTS. OF COMMERCE AND LABOR

**"I don't see
how we could
operate without
Motorola
2-Way Radio"**



**MORE THAN EVER—
MAINTENANCE AND CONSTRUCTION MEN CONSIDER
INSTANT 2-WAY RADIO AS PRIMARY "OPERATING MACHINERY"!**



**A Hard-Hitting, Quickly
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The Uni-Channel can be used as a fixed or fully mobile station. Easy to set up and easy to operate. Just plug in, connect antenna and go to work. The Motorola Permakay filter eliminates 15 nuisance tuning adjustments forever.



In any wide-spread, hard-driving operation you can count on Motorola 2-way radio to get machines and men on the job faster, keep supplies moving. Motorola mobile radio will streamline your operation, boost your efficiency.

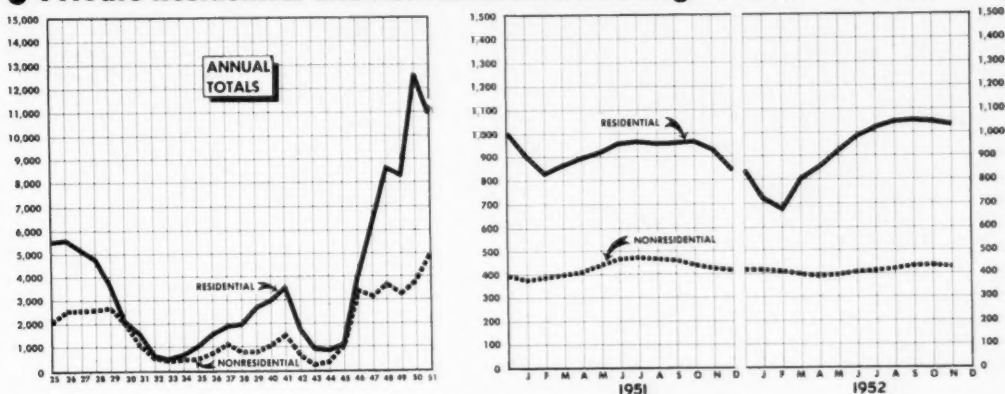
More and more construction men are finding that Motorola equipment pays for itself after only a few months' operation. Motorola engineering gives you dependable performance, lowest maintenance costs and obsolescence-proof circuits that protect your investment for years to come.

Motorola

Communications & Electronics Division
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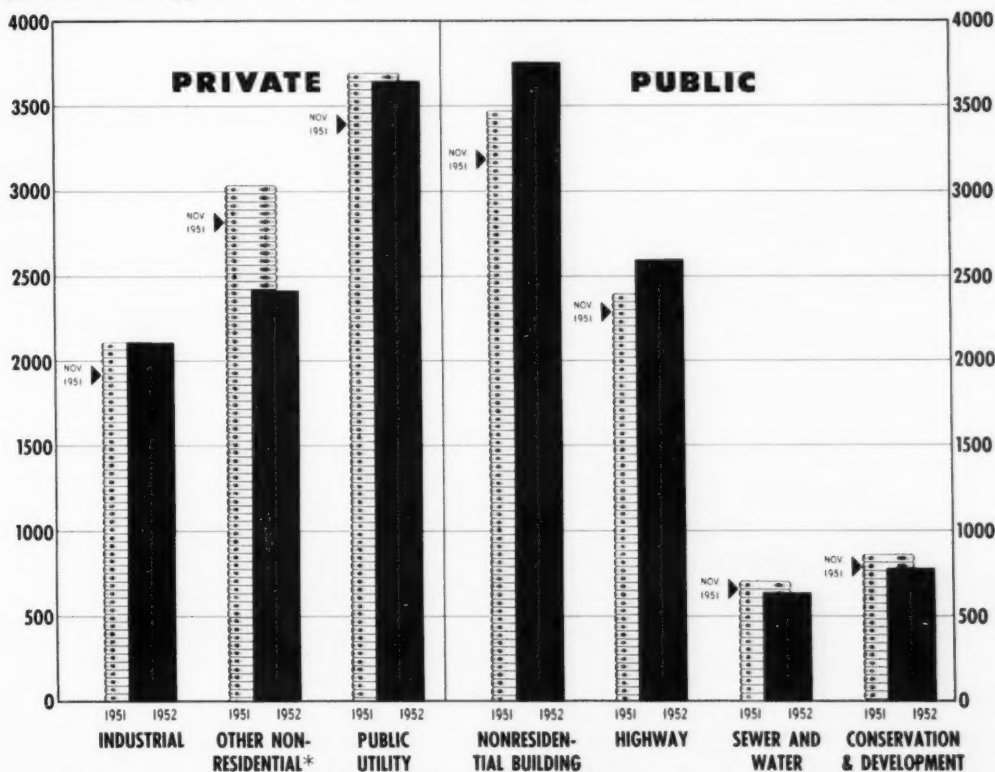
NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building* (MILLIONS OF DOLLARS)



* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building.

● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1951, 1952 VOLUME THROUGH NOVEMBER



*Includes commercial, institutional, and social and recreational building



ROCK CRATED!

AND READY FOR ANY JOB

P&H MAGNETORQUE^{*} Electric

Swing is 15% to 25% faster
than any 2½ yd. shovel



If it's husky strength you want, this is it! Tough all-welded construction throughout to take pounding and shock loads that would K.O. less rugged machines. It means steady digging — less maintenance — down through the years.

If it's speed, you have it Magnetorque — speed to out-produce any other machine in the 2½ yd. class — with a swing that's 15% to 25% faster. It's the greatest shovel improvement in 20 years. We'll gladly tell you where to see the 955-A working nearest you. Ask today!

If you want larger capacity, ask for facts about the Model 1055 (3½ yd.).

*T.M. of Harnischfeger Corporation for electro-magnetic type clutch.

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HARNISCHFEGER
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POWER SHOVELS • CRAWLER AND TRUCK CRANES • OVERHEAD CRANES • HOISTS • ARC WELDERS AND ELECTRODES • SOIL STABILIZERS • DIESEL ENGINES • PRE-FABRICATED HOMES

For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

This table indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from August 15, 1950 to October 15, 1952.

They are presented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

The Bureau of Labor Statistics surveys 10 key cities every month and 24 other large cities quarterly. Prices are obtained on food, fuel, apparel, house furnishings and miscellaneous goods and services. Rental information is obtained quarterly only for all cities. The computations are based on the indexes for the years 1935-39, which are taken as the average of 100 points.

	1950			1951			1952		
	AUG. 15	SEPT. 15	OCT. 15	AUG. 15	SEPT. 15	OCT. 15	AUG. 15	SEPT. 15	OCT. 15
Average.....	173.0	173.8	174.8	185.5	186.6	187.4	191.1	190.8	190.9
Birmingham, Ala.....	177.7	179.7	179.1	190.5	191.4	196.0	198.5	196.6	196.7
Mobile, Ala.....		172.9			185.6			189.4	
Los Angeles, Calif.....	169.1	169.5	171.3	186.6	187.2	187.9	192.0	192.2	191.9
San Francisco, Calif.....		176.0			184.4			195.6	
Denver, Colo.....			172.8			191.2			194.5
Washington, D. C.....	168.9			180.8			187.4		
Jacksonville, Fla.....		182.4			192.0			199.5	
Atlanta, Ga.....	176.6			193.1			198.4		
Savannah, Ga.....			181.6			197.8			201.8
Chicago, Ill.....	180.2	179.8	180.4	190.9	191.8	193.5	196.7	195.9	195.9
Indianapolis, Ind.....			179.8			189.7			193.1
New Orleans, La.....	178.7			188.9			192.7		
Portland, Me.....		167.9			178.6			182.8	
Baltimore, Md.....		178.1			190.5			197.6	
Boston, Mass.....	168.4	168.2	169.4	177.2	177.8	179.3	183.0	182.2	182.5
Detroit, Mich.....	175.1	175.4	177.7	188.5	189.0	190.2	194.2	193.6	195.0
Minneapolis, Minn.....		173.2			183.1			190.1	
Kansas City, Mo.....			167.4			180.4			185.5
St. Louis, Mo.....		175.0			186.2			192.7	
Manchester, N. H.....			176.2			187.0			189.3
Buffalo, N. Y.....			173.0			186.9			190.3
New York, N. Y.....	168.0	170.3	171.0	180.9	182.5	183.0	185.7	186.0	186.0
Cincinnati, Ohio.....	174.4	175.5	176.0	185.3	186.8	187.0	190.9	190.7	190.8
Cleveland, Ohio.....	176.0			189.1			194.2		
Portland, Ore.....			183.4			195.8			199.2
Philadelphia, Pa.....	172.3	173.6	173.8	185.4	186.1	186.7	191.2	190.8	190.7
Pittsburgh, Pa.....	176.4	177.7	179.2	188.8	190.0	191.2	192.9	192.5	192.8
Scranton, Pa.....	171.8			182.5			189.4		
Memphis, Tenn.....		177.2			189.0			192.9	
Houston, Tex.....	177.9	179.8	179.9	193.0	194.1	194.4	196.0	195.6	196.6
Norfolk, Va.....	177.2			188.6			195.7		
Richmond, Va.....			171.6			183.8			186.4
Seattle, Wash.....	175.2			190.9			195.9		
Milwaukee, Wis.....	175.7			192.3			199.2		

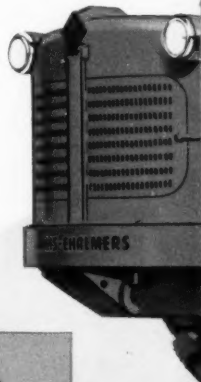


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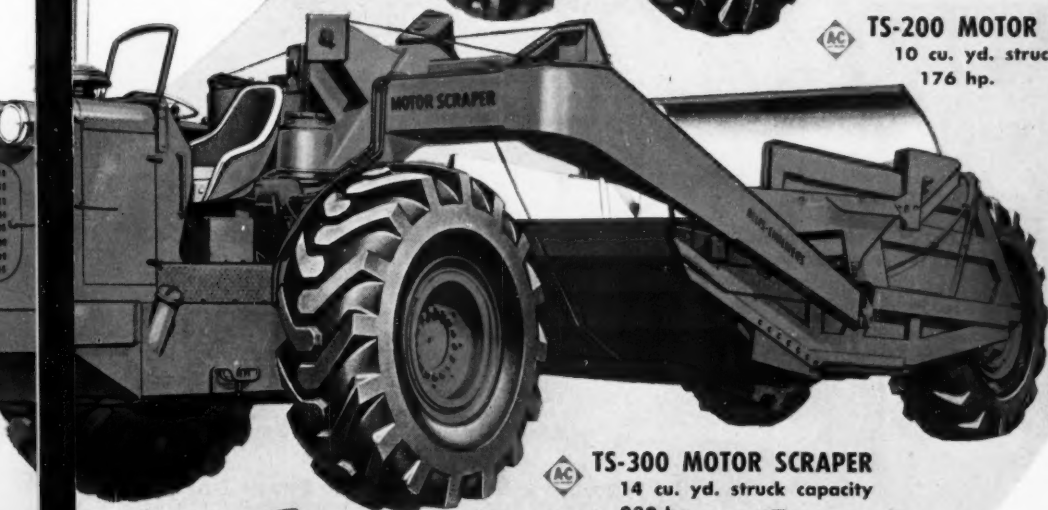
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TR-200 MOTOR WAGON
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TS-300 MOTOR SCRAPER
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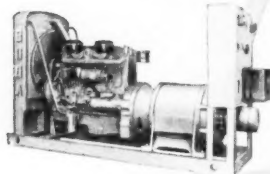
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SC-23

Sidelights for Contractors

By John C. Hayes, Counsel

Taxes

False Statements.—The Supreme Court has decided that federal tax-enforcement authorities may deal with false statements made to their representatives at a tax conference, similarly as with other methods of tax evasion. As in the filing of fraudulent tax returns, the court felt that the offense is a felony within Section 145 (b) of the Internal Revenue Code. A six-year, rather than a three-year, statute of limitations is applicable to offenses under this section.

Capital Loss.—Where the former stockholders of a corporation, after receiving the corporate assets on liquidation and reporting their profit thereon as capital gain, were required as the transferees to pay a judgment against the corporation in a subsequent year, the Supreme Court held that the stockholders' losses should be treated as capital, not ordinary, losses.

Excess Profits Tax.—Under Code section 122 (b) (6) authorizing the deduction of excess profits taxes "paid or accrued" within the taxable year, for purposes of computing net operating loss carry-backs and carry-overs to other years, the Court of Claims has permitted an accrual-basis taxpayer to add to its 1946 net operating loss, which is to be carried back to 1944, its excess profits taxes accrued in 1945 but paid in 1946. This decision conflicts with a Tax Court holding reported in the November "Sidelights."

Interest on Deficiency.—Although renegotiation may eliminate a taxpayer's liability for most of a tax deficiency, it does not wipe out interest otherwise due on the deficiency, according to a Circuit Court decision. Total tax liability attached as of the date of the return. Renegotiation did not alter it, but operated to decrease the amount of excessive profits to be repaid the United States by the amount of taxes previously paid.

Constructive Receipt.—Where a corporate dividend was declared and payable in 1946 but at the request of one

of the two stockholders was mailed to him only on the last day of the year, rather than being accepted in 1946 as the other stockholder did, the Tax Court held that the dividend nevertheless constituted taxable income constructively received in 1946. The fact situation here is distinguishable from that in which a corporation's policy is to pay dividends only by mail and dividend checks are mailed on the last day of the year and received in the following year.

Depreciation.—Under a Circuit Court ruling, depreciation deductions on a building erected by a life tenant at his own expense are to be computed at a rate based on the useful life of the building (50 years in this instance) rather than on the life expectancy of the life tenant (approximately 7 years in the case at court).

Receipt of Note.—A cash-basis taxpayer receiving a new promissory note consolidating older notes and other obligations owed him by another, including interest accrued from prior years, did not thereupon receive taxable income, the Tax Court concluded, since the note was not the equivalent of cash and was not given or accepted as payment.

Bonus to Widow.—Where a corporation, soon after the death in 1944 of one of its executives who had long been in its employ, departed from its usual practice and voluntarily paid to the widow of the deceased an amount equal to his salary for the remainder of the year plus a bonus he would have received if surviving, the Tax Court decided that the payment was not compensation for services but a gift, non-taxable as income to the widow. (There is doubt whether this decision would be followed by the Court on a post-1950 payment, in view of a change in Bureau of Internal Revenue rulings.)

Payments to Stockholder.—A Circuit Court has disallowed deductions claimed by a corporation for payment by it to its controlling stockholder of so-called commissions equalling 5% of its annual net sales. While the

stockholder did render some services, she devoted no regular time to the business, her position as an officer carried no prescribed salary, and the commissions were computed and paid to her only at the end of each year.

Correct Address.—Calling attention to the fact that the Bureau of Internal Revenue annually mails income tax refunds to half of the nation's taxpayers, the Bureau has requested that taxpayers advise it promptly of their changes of address. Since Government checks sent through the mail cannot be forwarded, incorrect addresses result in inconvenience to both parties and may prevent the refund from ever reaching the taxpayer.

Public Contracts

Cost-Plus Contract.—An equally-divided Supreme Court has affirmed a Court of Claims judgment that a prohibition in a cost-plus government contract against inclusion in reimbursable costs thereunder of losses suffered on other contracts does not prevent reimbursement to a cost-plus aircraft manufacturer for a deficit sustained on fixed-price experimental and development contracts directly related to the aircraft later supplied under the cost-plus contract.

Renegotiation.—The Renegotiation Board has amended its regulations to exempt all subcontracts related to prime contracts and subcontracts exempted under its authority to make permissive exemptions from renegotiation; except subcontracts related to prime contracts or subcontracts to be performed outside the United States, and other subcontracts, when the board, in exempting prime contracts or subcontracts, determines that the exemption will not extend to subcontracts related thereto.

Bureau Field Offices.—The Bureau of Internal Revenue has been busy with the task of reorganizing its field offices. Under the President's Reorganization Plan No. 1 of 1952, the reorganization was to have been completed for all districts by Dec. 1, 1952.

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Relations With Subcontractors

AS A NATIONAL association, the National Electrical Contractors Association has rejected the offer of The Associated General Contractors of America to establish a joint cooperative committee for the consideration of matters of mutual concern. (Page 27)

At its recent annual meeting the N.E.C.A. adopted a program for passage in the next session of Congress of legislation similar to S. 2907, which it sponsored during the past session. Action at the convention demonstrated the intention to prosecute the legislation program vigorously and aggressively. (Page 29)

During the last session of Congress the A.G.C. opposed this legislation—as did government agencies—on the grounds that it was not in the best interests of general contractors, subcontractors or the government, and would not solve the problems of bid shopping by general contractors and bid peddling by subcontractors of which N.E.C.A. complained.

The A.G.C. Governing and Advisory Boards at their meeting in September studied the problems of subcontractor relationships thoroughly and authorized the officers and Executive Committee to initiate cooperative action.

They adopted a motion that "recognizes the desirability of establishing better and closer relationships with specialty contractors, and urges all chapters, branches and members individually of A.G.C. to cooperate to this end, to correct any questionable practices so that harmony and confidence will be established in the industry."

Satisfactory relationships between general contractors and subcontractors have always been a problem in the highly competitive construction industry. Throughout the years many plans for solving the problem have been tried.

The problems of fair and equitable relationships between buyers and sellers and between people are as old as civilization. It does not seem probable that the problems of mutually satisfactory relationships between general contractors and subcontractors can be settled overnight, or by the passage of federal legislation.

Until some other rules are adopted jointly, or prescribed by legislation, the one published document for good relationships is the A.G.C. Code of Ethical Conduct. Section 3 of its Rules of Ethical Practice is as follows relating to subcontractors and materials suppliers:

"The operations of the contractor are made possible through the functioning of those agencies which furnish him with services or products, and in contracting with them he is rightfully obligated by the same principles of honor and fair dealings that he desires should govern the actions toward himself of architects, engineers and client owners.

"Ethical conduct with respect to subcontractors and those who supply materials requires that:

"1. Proposals should not be invited from anyone who is known to be unqualified to perform the proposed work or to render the proper service.

"2. The figures of one competitor shall not be made known to another before the award of the subcontract, nor should they be used by the contractor to secure a lower proposal from another bidder.

"3. The contract should preferably be awarded to the lowest bidder if he is qualified to perform the contract, but if the award is made to another bidder, it should be at the amount of the latter's bid.

"4. In no case should the low bidder be led to believe that a lower bid than his has been received.

"5. When the contractor has been paid by a client owner for work or material, he should make payment promptly, and in just proportion, to subcontractors and others."

Advance Planning

AGAIN this year the construction industry has set a new record for the volume of work put in place

The forecasts are that 1953 will be another big year for the industry. As has been true since the time of the Korean invasion, the accent has been on defense projects, defense production facilities, or other projects considered most essential for civilian needs. (Page 21)

While there have been the heavy demands by the defense program for steel, copper, aluminum and other materials, there have been the various controls which have limited the kinds of construction that can be undertaken.

But materials now are becoming more plentiful, and the time is fast approaching, if it has not already arrived, when the controls administered by the National Production Authority can be abolished or liberally relaxed.

The domestic needs for construction are tremendous. Much necessary publicity recently has been given to the need for a tremendous highway construction program so that our roads will be safer and more able to handle the increasing volume of traffic.

Many schools and hospitals have been built, but many more are needed for our growing population and to replace obsolete structures.

Many cities and towns have been growing so fast in recent years that a tremendous backlog has been built up of needed waterworks, sewage and other types of municipal projects. Commercial construction has been retarded during the defense program.

The bond issues voted by cities and states during the recent elections give a good indication of the pressing needs for new construction. (Page 22)

These projects, and the many others which will be needed, give assurance that there will continue to be a large volume of construction after the peak of defense construction has passed.

The important factor is that these projects should be planned in advance so that they can be started when conditions permit, so that they will fit their purposes most effectively, and so that they can be constructed most economically. Now is the time to make plans and blueprints for the future.

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» A GREATER PEAK of new construction in 1953, reaching perhaps \$33.5 billion, or 4% more than the estimated \$32.3 billion put in place this year, is predicted by the Department of Commerce and Labor.

Although both public and private construction are expected to advance, great discrepancies are forecast in types of work, especially private.

Commercial construction is expected to jump by more than 25% as a result of improved materials supply and eased credit controls, and public utilities, paced by the gas and electric light and power group, plan to spend an "unprecedented" \$4.4 billion, marking their 10th successive year of increasing construction activity.

On the other hand, private industrial building is slated to drop by 28% from this year's record outlay of \$2.3 billion as the peak defense expansion phase passes. Private institutional building also is earmarked for a drop, by 10%.

Practically all types of public construction are expected to expand, with the rise resulting "as much from increasing activity on civilian as on military types of public work."

Highway expenditures, paced by

New Construction for 1953 Slated to Approach Record \$33.5 Billion

- Estimated to Top 1952 Volume by \$1 Billion
- Commercial Construction Expected to Jump 25%

toll road work, will hit about \$3 billion, a 10% increase; public school building will increase 10% to another new high; and military and naval work will rise 18% to about \$1.6 billion.

Decreases are scheduled in the rates of public housing and public hospital construction.

Residential construction, based on "the anticipated favorable economic climate and ready availability of mortgage funds," will produce nearly \$11.5 billion of work, slightly higher than 1952, because the year will begin with a larger number of units already under way. Starts are expected to be about the same, over a million.

The forecast was made on the basis that materials will be plentiful, controls in force will not interrupt operations, labor will be adequate, costs will remain "relatively stable," and barring major international developments.

1952 1953
(Millions of Dollars)

Total New Construction	32,318	33,500
Private total	21,681	22,200
Nonfarm Res.	11,029	11,450
Nonresidential	4,945	4,600
Industrial	2,289	1,650
Commercial	1,101	1,400
Instit., Misc	1,555	1,550
Farm Constr.	1,700	1,700
Public Utility	3,925	4,350
Other Private	82	100
Public total	10,637	11,300
Residential	643	575
Nonresidential	4,104	4,250
Military, Naval	1,355	1,600
Highway	2,740	3,000
Sewer, water	686	725
Misc. Pub. Serv.	202	200
Conservation	843	875
Other Public	64	75

» LIEUT. GEN. Lewis A. Pick, chief of the Corps of Engineers since 1949 retired Nov. 30 after 36 years in the Army where he built up a reputation as a man who "gets things done."

Replacing Gen. Pick is Maj. Gen. Samuel D. Sturgis, Jr., now commanding general of the Communica-



Gen. Pick



Gen. Sturgis

tions Zone, U.S. Army, Europe, who will assume his new duties as soon as he is able to close out the business of his present assignment. In the meantime, Gen. Pick returned to active duty December 1 until Gen. Sturgis relieves him.

Gen. Pick, Chief of Engineers, Retires

- To Be Replaced by Maj. Gen. Sturgis, Now on Duty in Europe

Gen. Pick came into national prominence ten years ago when he was made division engineer of the Missouri River Division and began to put forth his controversial Pick-Sloan Plan, which called for a general development and flood control plan for the Missouri Basin costing over \$1.5 billion. For this, he was awarded an Oak Leaf Cluster in lieu of a second Distinguished Service Medal.

In October 1942, Gen. Pick was sent to the China-Burma-India Theater and achieved one of the great engineering feats of military history—the construction, operation and maintenance of the Ledo Road. Often referred to as Pick's Pike, this road was a main artery for supplies to the Chinese armies in their struggle against Japan.

Maj. Gen. Sturgis comes from a long line of career Army officers. His father, also a major general, commanded the 87th Division in

World War I and his grandfather Brevet Maj. Gen. Samuel D. Sturgis won fame in the Civil War. An uncle, Lt. J. G. Sturgis, serving with the 7th Cavalry died during Custer's Last Stand in the Battle of the Little Big Horn, June 25, 1876.

Early in World War II, Gen. Sturgis, then district engineer at Vicksburg, was active in flood control work. Later in 1943 he was made chief engineer for the Sixth Army under Gen. Walter Krueger and took charge of airbase, port and Army construction in 22 amphibious operations from Australia to Japan.

After the war, Gen. Sturgis was assigned to the War Department's general staff and in May 1949 he became engineer of the Missouri River Division at Omaha and continued to carry out his predecessor's Pick-Sloan Plan. Early in 1951 he assumed command of the Sixth Armored Division and a year later he took over his European command.

Bond Issue Vote Shows Public Works Need

• Highways, Schools Lead List in November Elections

» WHILE the election spotlight was focussed on high political offices last month, the pent-up demand for local and state public works burst across the nation as voters paved the way for millions of dollars of new construction in many states.

- A record volume of over \$1 billion in new bond issues, the majority of which will be for construction, was approved, in addition to other types of authorizations which will provide for other millions of dollars of building in the future.

- Expression of a public determination to improve and expand the nation's highway system was evidenced in many states, paced by overwhelming approval of the New Jersey \$285 million Garden State Parkway toll facility. Three states voted amendments banning diversion of highway funds.

- New school construction followed close behind highways and bridges, and provision was made in some states for hospital building, industrial development, airport facilities, sewer and water works, and housing.

- While voting additional spending for public works, the voters rejected proposals for additional state taxes almost everywhere.

- On the labor front, proposals for restrictions on labor union activities were adopted in Arizona and Nevada, the only two states in which such measures were on the ballot.

Here are some of the most important results of the elections:

Highways, Bridges, Airports

Alabama: Passed a constitutional amendment prohibiting diversion of highway-user tax revenues to non-highway purposes. Over the past 10 years Alabama has diverted more than \$15 million in such funds.

Arizona: Passed a similar anti-diversion amendment to insure continuation of that state's traditional policy.

Arkansas: Authorized reorganization of State Highway Commission.

Florida: Approved an amendment earmarking part of the motor vehicle license revenues for financing a state school building program.

Georgia: Approved an anti-diver-

sion amendment over opposition of Georgia Education Association and several other organizations. Georgia Better Roads Committee, Farm Bureau Federation and others led fight for more highway funds, pointing out that only 23% of the state's farms are within a mile of a paved road, lowest percentage in nation. Highway Users' Conference reports state has diverted \$87.5 million in past 10 years.

Louisiana: Passed an amendment authorizing a \$30 million bond issue to finance highway projects and access roads to a \$50 million bridge over the Mississippi River at New Orleans, and dedicated highway license revenues and part of gasoline tax to financing the structure.

Minnesota: Defeated a proposal to give local governments a share of motor vehicle registration receipts, all of which go to state trunk highway construction and maintenance.

Montana: Rejected a measure to increase state gasoline tax from 6 to 7 cents per gallon for more highway construction.

New Jersey: Overwhelmingly approved a projected \$285 million bond issue to complete the Garden State Parkway as a toll facility, with free use by local traffic on some sections. A \$17 million loan from banks permitted start of the 180-mile project, and voters were told the bond issue would expedite work—expected to be completed in 1953—and save \$80 million in interest charges. Authority headed by State Highway Commissioner Ransford J. Abbott was created by 1952 legislature to handle project to be let in 14 sections.

Rhode Island: Approved a \$1 million bond issue to construct new hangar and other facilities for Air National Guard at North Central Airport in Smithfield.

Building Construction

Arkansas: Rejected proposal to authorize tax levies by cities of first and second class to provide funds to finance new industries.

California: Approved by a margin of 4 to 1 issuance of \$185 million in bonds for loans and grants to school districts for construction; adopted an amendment dealing with taxation of property in community develop-

ment projects and providing an alternative method of financing interest and redemption payments on bonds of such agencies; authorized a bond issue of \$150 million to continue program of loans to veterans to acquire farms and homes; and authorized legislature to commit state funds to non-profit corporations for hospital construction when similar federal-aid money is available.

Florida: Earmarked enough revenue from motor vehicle licenses for 30 years to guarantee present school construction allocations to counties and authorized bond issue loans against such future income for projects now. It will cover an estimated \$100 million of new buildings.

Kansas: Authorized legislature to impose special levy to finance state hospital construction.

Louisiana: Authorized parishes (counties), wards and municipalities to vote general obligation bonds up to 20% of assessed valuations to build industrial plants for lease or sale to private enterprise. Known as "Balance Agriculture with Industry" plan, it is somewhat similar to Mississippi's BAWI program.

Missouri: Authorized school districts, by a two-thirds vote of citizens, to raise limit of bonded debt from 5 to 10% of property valuation.

New Jersey: Authorized by 4 to 1 vote a \$25 million issue for completion of state institutional building program, mostly for mental hospitals.

Rhode Island: Approved issues totalling \$5.6 million for various institutional projects.

Washington: A measure to increase from 5 to 10% of assessed valuations the amount of bonds which school districts may issue for building purposes was leading in a close vote.

Local and Miscellaneous Issues

Proposals in Los Angeles County were approved to borrow \$293 million for water, power and flood control.

Bond issues for the following cities were approved: Cleveland, 16 issues totalling \$54 million, including a \$7 million urban redevelopment program; Baltimore, six issues totalling \$47 million for water, harbor and school improvements; Kansas City, Mo., \$16 million for expansion of its water system; Wichita, Kans., \$11.6 million for water, sewer, fire station and other projects; and various projects in Cincinnati, Houston, Philadelphia, San Francisco and Louisville.

Rhode Island voted to permit the

Blackstone Valley Sewer Commission to issue another \$7.5 million in self-liquidating bonds to carry out its anti-pollution program.

Disapproved were: \$10 million for a San Diego courthouse; \$7 million for a Cuyahoga County, Ohio, office building; \$4.8 million for a Cuyahoga County, Ohio, office building; \$4.9 million for airport expansion at Denver; and \$10 million for improvements at Canton, Ohio.

Nevada outlawed all forms of compulsory union membership contracts, and strikes or picketing to force agreements contrary to the measure. It provides for injunction against such actions and damage suits against violators, and holds labor unions or organizations liable for acts of their agents acting in official capacity. Attempts to put the law on the statute books started after a series of strikes in 1949.

Arizona also approved an initiated act, outlawing secondary boycotts and prohibiting picketing unless "there exists between the employer and the majority of employees of such establishment a bona fide dispute regarding wages or working conditions." Effect is to prevent picketing to force management to sign up with a union.

Disputes Clause Changed

The Defense Department last month issued in the *Federal Register* a new "disputes clause" for use in defense fixed-price construction contracts, which permits review by the courts of contracting officers' decisions which are found to be "fraudulent, arbitrary, capricious, or so grossly erroneous as necessarily to imply bad faith."

The revision was issued with the concurrence of the General Services Administration, which has general cognizance of all federal contractual procedure. GSA meanwhile has been working with all construction agencies on a revision of the standard government construction contract Form 23—including the disputes clause, Article 15—which is expected to be out in the near future.

Need for legislation to assure the right of judicial review of disputes, including relief for contractors operating under existing federal contracts, was restated by the Governing and Advisory Boards of The Associated General Contractors of America at its fall meeting.

Major Changes Expected of New Congress

• Teamwork with President Seen; Probable Committee Heads

» SOME MAJOR national legislation now on the books may be due for a reversal at the hands of the 83rd Congress which convenes Jan. 3, and President-elect Eisenhower is expected to have even stronger Senate support on most major issues than the Truman opposition that was so evident in the past few years.

These are the conclusions of a study by the authoritative *Congressional Quarterly*, based on past voting records of returning Congressmen and views of new members.

- Price and wage controls, having lost strength in both Houses, appear to be in for rough sledding. They are due to expire April 30, 1953.

- More conservative spending seems definitely in the cards, and two key committee chairmen have favored public works appropriations cuts in the past. "The new Congress apparently will be more economy-minded than its predecessors on such matters as appropriations for rivers and harbors projects," *Congressional Quarterly* said, noting the close Senate vote on such cuts early this year.

- A compromise tax law is a possibility, although officials close to Eisenhower express pessimism that much reduction will be possible before about two years.

- States' title to tidelands oil seems assured, based on the 82nd Congress' vote and Eisenhower's stand.

- St. Lawrence Seaway project promotion appears to be stronger in the Senate, which narrowly defeated the proposal this year. The House position is uncertain. (New York State Power Authority members believe election results will help remove remaining obstacles to the state's development of the St. Lawrence hydroelectric potential in cooperation with Canada.)

Committee Chairmen

Twelve Republican senators will become committee chairmen for the first time, and the other four Senate committees will be headed by the same senators who held the reins in the 80th Congress. Most new chairmen of the 19 House committees headed the same groups in 1947-48.

Probable new chairmen of some of the key committees will be:

Senate—Appropriations, Styles Bridges (N.H.); Finance, Eugene D. Millikin (Colo.); Labor and Public Welfare, Robert A. Taft (Ohio); Armed Services, Leverett Saltonstall (Mass.); Banking and Currency, Homer E. Capehart (Ind.); Judiciary, William Langer (N. Dak.); Public Works, Edward Martin (Pa.), who moves up as a result of the defeat of Harry P. Cain (Wash.).

House—Appropriations, John Taber (N.Y.), who has been noted for economy-mindedness; Armed Services, Dewey Short (Mo.); Banking and Currency, Jesse P. Wolcott (Mich.); Education and Labor, Samuel K. McConnell, Jr. (Pa.); Judiciary, Chauncey W. Reed (Ill.); Public Works, George A. Dondero (Mich.); Ways and Means (taxes), Daniel A. Reed (N.Y.).

Cabinet Posts Noted

In the Cabinet, Oregon Governor Douglas McKay, who will be Secretary of the Interior, has long been a foe of the Truman Administration's valley authority attempts. He has advocated big public reclamation projects with proper recognition of states' rights, but has proposed giving private enterprise first opportunity for resource development as it can.

The appointment of W. Walter Williams, Seattle mortgage banker, as Undersecretary of Commerce is of interest to the construction industry. This department generally is expected to play a more important role in the Administration than in the past.

Mr. Williams, who has headed the influential Committee for Economic Development, demonstrated a basic insight into the construction industry in his address to the 1950 convention of The Associated General Contractors of America, where he said a C.E.D. project showed that construction has a better stability record than is popularly believed, which indicates the industry is not the place for tinkering by economic planners who would use it as the "goat" in attempting to stabilize the economy.

Besides, Mr. Williams added, the industry is far too complex and diversified to fit into any simple plan.

Role of Public Works in Economy Studied

• U. S. Chamber Appoints Committee to Coordinate Policies

» A NEW SUBCOMMITTEE on Public Works Construction will be established by the Chamber of Commerce of the United States.

Its purpose will be to "develop a proposed policy statement setting forth the essential role of public works construction in a progressive and dynamic economy, including principles involved in determining the needs for public works construction and in getting such construction scheduled and financed."

The new subcommittee will have its members selected from the Construction and Civic Development Department, Transportation and Communi-

cation Department, Natural Resources Department, and the Committee on Government Economy. The aim is to have the subcommittee so constituted as to give full consideration to the thinking of all interested departments of the Chamber.

The recommendation for the new subcommittee came from the Joint Subcommittee on Highway Transportation and Construction, which had drawn its membership from both the Construction and Civic Development and the Transportation and Communication Departments. Its original purpose was to explore methods of better cooperation among Cham-

ber departments in the development of policies on highway construction.

M. W. Watson, of Topeka, Kans., a Chamber director and Past President of The Associated General Contractors of America, and chairman of the joint subcommittee suggested that the objectives could be broadened to include all public works. The joint subcommittee was subsequently abolished in favor of the new subcommittee on public works.

It was recommended that the transportation department committee meeting in December give further consideration to policies on use of federal-aid funds on secondary highways and purchase of rights-of-way in urban areas, and also consider the desirability of a study of long-range highway design as affected by future truck axle-load limitations.



First Meeting of A.G.C. Executive Committee to Be Held in New Conference Room

The Executive Committee of The Associated General Contractors of America held its first meeting in the new conference room at national headquarters November 13-14. The conference table was a gift to the association by the Past Presidents. Around the table from left to right are: Past President William Muirhead, Secretary-Treasurer; Fred W. Heldenfels, Jr.; John C. Hayes, Counsel; Arthur H. Wells; Assistant Managing Director J. D. Marshall; C. S. Embrey, national staff; Managing Director H. E. Foreman; President Arthur S. Horner; Vice President C. P. Street; John MacLeod; Past President Walter L. Conser; Past President D. W. Winkelman; Edward P. Coblenz; W. Murray Werner; and Past President Glen W. Maxon. On the wall at the rear are pictures of the Past Presidents. A. S. MacDonald and Past President Adolph Teichert, Jr., were unable to attend the meeting.



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» THE INVITATION of The Associated General Contractors of America to establish a joint committee which could "sit down in an atmosphere of mutual respect and understanding and start to work on a satisfactory course of action leading to more harmonious relationships between general contractors and electrical contractors" has been rejected by the National Electrical Contractors Association.

The N.E.C.A., which during the past session of Congress had pressed vigorously for passage of S. 2907, to require general contractors to name subcontractors and their prices in bids on federal projects and to further encourage the use of specialty contractors, sought in its reply to imply that the A.G.C. lacked sincerity and good faith in its offer.

A.G.C. President Arthur S. Horner, in responding to the letter from N.E.C.A. president D. B. Clayton, Sr., stated in part:

"We regret that your group has turned down a genuine offer of cooperation to solve our mutual problems. We were sincere in our belief that those of us in the construction industry should have the maturity and should take the responsibility of solving among ourselves the problems which face us. We are also convinced that even if the federal legislation which your group seeks were enacted it would not stop the practices of some electrical and general contractors of which you complain. . . .

"We hope that when there has been more time to study the proposals which have been made, you will reconsider the decision which your association has made and will join in cooperative efforts whereby the best intelligence in the industry can be directed toward means whereby segments of the industry can join in serving the public most effectively."

Joint Committee Offered

The A.G.C. Governing and Advisory Boards, meeting at White Sulphur Springs in September, made a thorough study of problems relating to bidding and awarding procedures of general and subcontractors and authorized the officers and Executive Committee to "initiate such cooperative actions as they deem appropriate, directed toward establishing more harmonious relationships between specialty contractors and general contractors. The Boards further recommend that chapters and branches take

N. E. C. A. Shuns Plan for Industry To Solve Its Internal Problems

- Attacks A.G.C. Publicly in Spurning Cooperation
- Subcontractors Seek More Government Regulation

such action in their areas."

Carrying out the A.G.C. boards' action, President Horner on Sept. 29 wrote to N.E.C.A. recommending establishment of a joint committee, enclosing a copy of the A.G.C. statement on just and harmonious relationships in the industry (October CONSTRUCTOR, page 29). He stated in part:

"You will note that it discusses the success which the national and local joint committees, which the association maintains with other associations and societies in the industry, have had in identifying and bringing about a wider understanding of the rights and responsibilities of each group, and in developing more harmonious relationships."

"We in the A.G.C. have felt also that the spectacle of segments of the industry fighting before Congressional committees or before other legislative bodies, or of asking for legislation so that public officials or owners intervene in the relationships between businessmen impairs public confidence in the industry. Our belief is that we can solve our problems more satisfactorily within the industry."

Original N.E.C.A. Response

N.E.C.A. President Clayton, on Oct. 15, following the N.E.C.A. annual convention, replied to Mr. Horner, stating in part:

"I read this letter with interest and assure you and your Executive Committee that our association and its officers would like nothing better than to be able to cooperate wholeheartedly with your group toward improving the construction industry in which we are so closely associated. . . .

"I shall be in Washington on Tuesday, Oct. 21, and will try to set up the right kind of committee to comply with your request. Our Board of Governors, at the Chicago convention last week, approved of this procedure and instructed me to appoint the committee."

"I certainly hope that we will be able, through meetings of these two committees, to eliminate some of the trouble that we have been having and

be able to offer a more sound service to the public who look to us to solve their construction problems."

November 11 Meeting Held

A meeting of committees from the two associations was arranged for Nov. 11 in the conference room at A.G.C. headquarters. It was attended by seven of the eight members of the N.E.C.A. committee and by eight of the nine members of the A.G.C. committee. In welcoming N.E.C.A. members to the meeting, President Horner said in part.

"We all recognize that there has been some unrest in the relationships between general contractors and specialty and subcontractors. Obviously our industry is going to serve the public more effectively if there is cooperation, rather than strife, between us. Our belief is that both groups have allowed this condition to come about and that both groups have the responsibility to take steps to cure it."

"You have heard some of us in A.G.C. say previously that we believe that the problems which face our groups are primarily those of ethics. The A.G.C. Code of Ethical conduct states that general contractors should follow the Golden Rule in treating other people as we wish to be treated ourselves. We know that through the years the ethics of general contractors have improved. Undoubtedly, your code of ethics is somewhat similar to ours."

"None of us expects that we can reform the world or change human nature overnight. But we in A.G.C. do believe that meetings such as this, conducted in an atmosphere of mutual respect and confidence, can lead to a better understanding of our common problems. Our experience with other joint committees has been that a better understanding has led to recommendations which have been of benefit to both groups, to the industry generally, and to the public."

"In other committees we have found that discussions of initial differences have led to amicable settlements and that there were matters in which our interests were found to be identical

and in which we could join forces for the common good. These national committees also serve as models for local committees which have served to further understanding between the two groups in states and other communities.

"It is not intended that this committee shall supplant any other committees of either organization, but rather that it should operate on an exploratory basis and develop its joint recommendations subject to ratification by the respective organizations. We believe it can serve as a medium through which both organizations can cooperate to correct questionable practices in the industry so that harmony and confidence can prevail, and so that we can carry out our responsibilities as businessmen and serve the public most effectively."

The committees of the two groups had extensive discussions in their morning and afternoon sessions. The electrical contractors stated their determination to seek passage of the kind of legislation which they previously had sponsored at the next session of Congress. A.G.C. representatives pointed out that even if federal legislation were enacted it would not solve the problems of bid shopping by general contractors or bid peddling by electrical contractors.

A.G.C. representatives also pointed out that federal contracts are only a small part of the total construction volume and that means would appear to be desirable to solve problems arising in non-federal construction. The meeting concluded with N.E.C.A. taking under advisement the establishment of a joint committee to study problems of bidding and awarding procedures on non-federal work.

The A.G.C. had recommended that the two associations develop a mutually agreeable bidding and awarding procedure which could be recommended to chapters of both groups.

N.E.C.A. Rejection Outlined

The N.E.C.A., in connection with its reply, announced that it will again aggressively take such steps as are necessary to secure enactment of its proposed legislation and that moves to achieve this objective are under way and are being prosecuted vigorously and stated that "the proposal of A.G.C. to set up committees for cooperative action is simply a continuation of A.G.C.'s program of delaying a solution of the problem, and that unless A.G.C. has a definite pro-

posal as to how cooperation can cure these evils, their overtures are not being made in good faith."

N.E.C.A. President Clayton replied to the A.G.C., Nov. 17, in a four-page letter, which was issued by the association in a press release along with other material and a three-page background memorandum. Both contained statements which were at variance with the A.G.C. understanding of the

Subcontractor Legislation

Last session of Congress the National Electrical Contractors Association; National Association of Master Plumbers; and Heating, Piping, and Air Conditioning Contractors' National Association aggressively sought passage of S. 2907 by the Congress.

The bill provided that no executive agency shall award a lump sum contract for a federal public works project unless (1) such agency shall first make an estimate of the cost of completion of each class of mechanical specialty work, (2) plans and specifications are prepared for each such class of work costing more than \$5,000, (3) the name of the subcontractor (or qualified contractor) of each such class of work is set forth in any written bid submitted, and (4) the name of the subcontractor and cost is specified in the contract.

Modifications of this were contained in several House bills.

The Senate bill was introduced by Senators Kilgore, Sparkman and Ferguson. Senator Kilgore headed a subcommittee of the Senate Judiciary Committee which held public hearings on the bill.

The specialty contractor associations complained of bid shopping by general contractors and bid peddling by subcontractors, and contended that such legislation was the only cure to such "evils."

A.G.C. representatives at public hearings pointed out why the bill was impractical, and would be contrary to the best interests of all kinds of contractors and the government. Representatives of federal agencies also opposed it.

The bill was reported without recommendation by the Senate Judiciary Committee, and objections to its consideration prevented action on the Senate floor. The House Judiciary Committee took no action on the bills referred to it.

discussions between its committees and its own intentions. Mr. Clayton stated in part:

"The A.G.C. committee rejected the N.E.C.A. committee proposal for joint promotion of mutually satisfactory federal legislation but admitted that it had no proposal to accomplish the agreed objectives for the elimination of these unfair trade practices with regard to the area of federal construction. In this connection the A.G.C. committee contended that the advocacy of legislation represented a request for government interference with the conduct of private industry, whereas the N.E.C.A. committee stated that such legislation represented merely a request for the federal government, as owner, to establish contracting policies to be observed by the government agencies as customers for the services of the construction industry.

"It is difficult for us to understand the refusal of the A.G.C. to support legislation which would implement A.G.C.'s own Code of Ethical Conduct with respect to the business of one important customer, the federal government. We feel that it would be an indication of the sincerity of A.G.C. if it were to join with us in a plan to accomplish these objectives with respect to federal government construction.

"The N.E.C.A. believes that the elimination or reduction of the admitted evils existing in connection with the award of specialty subcontracts on federal work would tend to accomplish our objective on non-governmental work. The A.G.C. has not submitted and apparently does not intend to submit any substitute for the N.E.C.A. proposal but merely suggests the establishment of a continuing joint committee to cooperate. N.E.C.A. wants to cooperate, but realizes that there is no magic in the word itself. It believes there must be a plan upon which to cooperate, or the existence of a joint committee which has no plan would become merely a delaying device which might be used to create the impression that N.E.C.A. believes there is some appropriate substitute for legislation insofar as federal work is concerned. . . .

"We regret to have to advise you that in view of the existence of these unfavorable factors it has been decided that N.E.C.A. will not participate in the establishment of a continuing joint A.G.C.-N.E.C.A. committee at this time, but instead recom-

N.E.C.A. Plans Vigorous S.2907 Campaign

• Annual Convention Acts to Gird Membership For Long Fight

mends that a continuing contact be maintained through our respective administrative officers at Washington so that, if and when A.G.C. develops any cooperative plan for the solution of any of the construction industry's problems, such plan may be reviewed, referred to the appropriate N.E.C.A. committee, and, if any substantial results appear possible, arrangements made for a joint committee meeting."

Plan Suggested by A.G.C.

A.G.C. President Horner acknowledged receipt of the N.E.C.A. reply on Nov. 18 in a letter which stated in part:

"At the meeting on Nov. 11 of committees of the two associations we offered the creation of a joint committee to study the problems of bidding and awarding procedures between general contractors and subcontractors in the industry with reference to contracts other than federal contracts, if you wished to continue to seek legislation governing federal contracts.

"The A.G.C. offered to develop with your association a bidding and awarding procedure which could be recommended to both N.E.C.A. and A.G.C. chapters. The suggestion also was made for local chapters of the two associations to form joint committees to consider charges of violations of such approved procedures, with appeals possible to a similar national committee.

"We offered to use the A.G.C. Code of Ethical Conduct, which your members have indicated is satisfactory to them, and bidding procedures developed with architects, as the basis for discussions, as well as your own code.

"We believe that such an approach to our common problems is more in keeping with our responsibilities as businessmen than an appeal to government for further regulation of the construction industry. We believe that such an approach offers the possibilities of solving problems on private contracts, as well as public works contracts which are only a small part of the entire construction volume. . . .

"The A.G.C. will continue its broad program of cooperation with other segments of the industry which are leading to better relationships which are of benefit to the individual groups, to the industry, and to the public. I expect that our members will express their views to members of Congress and other legislative bodies that legislation such as has been proposed does not solve the problem before us."

» ACTIONS TAKEN At the recent annual convention of the National Electrical Contractors Association in Chicago leave no doubt of that organization's determination to continue with full force its campaign for federal enactment of S.2907 or similar legislation.

That no time will be wasted is evident by N.E.C.A.'s present intention to have identical measures presented in both houses on the opening day of the 83rd Congress, Jan. 3. Another objective is the appointment of a Senate watchdog committee to see that all provisions of the act are strictly enforced.

Wants Watchdog Committee

Passage of the law and appointment of the watchdog committee were listed among its goals for 1953 by N.E.C.A.'s Governmental Affairs Committee of which C. W. Moseley of Charlotte, N. C., is chairman. These moves were endorsed by the convention which also passed a resolution requesting all members to report to association headquarters full details of all violations of the contract method in federal construction by "unscrupulous" prime contractors and to discuss this situation with their Congressman.

The Governmental Affairs Committee also asked for active support by the association's chapters and formation of local or state liaison committees with other interested specialty contracting industries. Making it plain that N.E.C.A.'s plans do not stop with enactment of a national law for federal construction, the committee said steps should be taken through these local groups to bring about "mutually beneficial actions in the states and local communities."

Other Support Sought

The committee also called for "every effort to obtain the support of other branches of the construction industry in these legislative efforts" and particularly for a closer contact with architects and engineers at all levels.

Declaring that the association was going into the campaign "with every expectation" of winning, the committee asked for membership approval with the understanding that "the successful conclusion of this campaign will require expenditures considerably

more than those so far encountered."

The N.E.C.A. fight to secure passage of S.2907 is also slated to receive support from a major "business development program" unanimously endorsed by the N.E.C.A. Board of Governors and approved by the convention subject to the pledged cooperation of 75% of the association's 105 chapters by Dec. 15, 1952.

Help From \$175,000 Program

The program, which lists the elimination of bid shopping and peddling and the eradication of "recognition of unqualified contractors by our customers" among its general objectives, provides for the expenditure of \$175,000 in 1953 for institutional advertising and direct contact industry-selling closely integrated with chapter and individual member promotional activities.

In subsequent years 10% of the association's net dues income each year would be spent on a national program and 15% of the aggregate amount of the net national dues of each chapter on its own local program. The chapters' programs would be conducted in agreement with the national program in effect each year.

Fundamental Industry Change

The business development program is based on a fundamental change in the association's approach to getting business—less dependence upon competitive bidding and more on selling the customer the value of the specialty electrical contractor. Fuller & Smith & Ross, an advertising agency, highly regarded in the industrial advertising field, has been selected by the electrical contractors.

N.E.C.A. now has over 3,100 member-firms which it claims are 29% of the electrical contracting industry. The association's members handle slightly over 53% of electrical construction, according to N.E.C.A. President D. B. Clayton, Sr., who declared that the association could not hope to accomplish its aims for the industry unless it built its membership up.

Senator Harley M. Kilgore (D., W.Va.), addressed the convention and stated he will do all within his power to secure enactment of legislation similar to S.2907 at the next session of Congress.

Equipment Supplies More Adequate Now

• Manufacturers and Distributors Urge Controls Lifted

» MORE new equipment and repair parts are available to contractors now than last year but there is no oversupply.

This was revealed by discussions at separate meetings in Chicago Nov. 7 of the joint cooperative committees which The Associated General Contractors of America maintains with the Construction Industry Manufacturers Association and the Associated Equipment Distributors.

Military Demands Uncertain

The manufacturers pointed out that military demands for repair parts are unpredictable, and can influence the supply adversely. There is no shortage of rubber for tires.

The manufacturers stated that they could not see the need for continuing any kind of controls over machinery or construction. They reported that about a 4% to 8% increase in price was needed to offset increased costs of manufacturing. They also reported on their support of Project Adequate Roads and all moves to stimulate necessary construction.

The distributors discussed the problems brought about when contractors have oversupplies of repair parts at the completion of big projects. It was agreed that a pamphlet or some sort of aid should be developed to give guidance to contractors on how many

and what kind of repair parts should be ordered for various machines.

The third party equipment rental form as revised by the Army Corps of Engineers and CPR 105, for the sale of used equipment, as revised by the Office of Price Stabilization are now more satisfactory documents, the distributors reported.

Like the manufacturers, the distributors stated that there are more new machines available to contractors, but there is a shortage of good used equipment.

The next meetings of the committees will be held in connection with the A.G.C. 34th annual convention in Miami the week of March 23, 1953.

Manufacturers Attending

Those in attendance representing C.I.M.A. were: Julien R. Steelman, Koehring Co., Milwaukee, C.I.M.A. president; W. B. Greene, Barber-Greene Co., Aurora, Ill., co-chairman; Everett F. Armstrong, Euclid Road Machinery Co., Cleveland; J. T. Callaway, Goodyear Tire & Rubber Co., Chicago; Carleton R. Dodge, Northwest Engineering Co., Chicago; Ray McLean, Jaeger Machine Co., Columbus; H. T. Reishus, International Harvester Co., Chicago; Ralph K. Stiles, Austin-Western Co., Aurora, Ill.; M. B. Garber, Thew Shovel Co., Lorain, Ohio; and Harold F. Hess,

C.I.M.A. executive vice president and committee co-secretary.

Distributors Attending

Those in attendance representing A.E.D. were: H. J. Hush, Griffin Equipment Corp., New York, A.E.D. president; P. A. Dufford, International Equipment Co., Boise, co-chairman; A. Ashley Carroll, Eastern Equipment Sales, Springfield, Mass.; W. H. McIlhenny, McIlhenny Equipment Co., Roanoke, Va.; S. J. Oeschle, Metalweld, Inc., Philadelphia; and R. E. Wittauer.

Contractors Attending

Representing A.G.C. at one or both meetings were: Past President D. W. Winkelman, Syracuse, co-chairman A.G.C.-C.I.M.A. committee; C. E. Cooke, Cooke Contracting Co., Detroit, co-chairman A.G.C.-A.E.D. committee; W. D. Amis, Amis Construction Co., Oklahoma City; Leet M. Denton, Denton Construction Co., Detroit; E. C. Hoepfner, Hoepfner-Bartlett Co., Eau Claire, Wisc.; George C. Koss, Koss Construction Co., Des Moines; R. A. Smith, P. J. Walker Co., Los Angeles; P. M. Thornton, Thornton Construction Co., Hancock, Mich.; F. B. Winston, Winston Brothers Co., Minneapolis; and C. S. Embrey, A.G.C. national office, co-secretary for both committees.

Study Airport Construction

Possible revisions in the Federal Airport Act, methods to secure increased financing for airport construction, and further simplification of Civil Aeronautics Administration procedures received serious study by the national joint cooperative committee of the National Association of State Aviation Officials and The Associated General Contractors of America Nov. 20 in St. Petersburg, Fla.

Other subjects discussed included appropriation of state funds for airport development; airport construction operations as related to the national defense program; increased uniformity of airport specifications of the various federal agencies; and status of the national airport plan.

The sessions were held in connection with the N.A.S.A.O. annual convention. Claude B. Friday, director, New York State Bureau of Aviation, Albany, and Max C. Harrison, Harrison Construction Co., Pittsburgh, served as co-chairmen.

Education Program for New Products

» THE PRODUCERS' council, which represents manufacturers of building materials and equipment, is making a survey among its members to find out how many of them have educational material about their products which could be used by contractors, and what the nature of this material is.

The survey was recommended at a recent meeting of the A.G.C.-Producers' Council Joint Cooperative Committee. Another recommendation adopted by the Committee and approved by the A.G.C. Executive Council last month, called for the formation of local joint committees between chapters of the Producers' Council and A.G.C. building chapters. This step is now being urged upon its chap-

ters by the equipment manufacturers' organization with the suggestion they contact the local A.G.C. chapters.

It is the plan of the national joint committee to foster the development of educational programs by Producers' Council members which would deal with new building products and equipment and their use. A recent questionnaire circulated among A.G.C. building chapters revealed that they favored the use of such programs at their regular chapter meetings and could use from 1 to 12 programs a year.

The results of the Council's survey of its members will be made known to A.G.C. which will then notify its building chapters as to just what programs are immediately available.

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Drop in Industrial Building Costs Predicted

- Better Planning and More Competition Cited as Causes

» A MODEST downward slant in industrial construction costs next year was predicted last month by Myron L. Matthews of The Dow Service, New York building reporters.

Mr. Matthews told delegates at a session of the Society of Industrial Realtors convention in Miami Beach that "irresistible, not-to-be-denied economic laws are tugging and pulling at the present phenomenally high level of construction costs and, given half a chance, will pull them down."

20% Decline by End of '54

He estimated that the expected adjustment would not exceed 20% by the end of 1954. "If we should get as much as a 20% drop, that would leave construction costs about 93% above the booming twenties and prewar 1941." He pointed out that, with a total building cost rise of 140% since prewar 1941, the increase during the most recent six months is only 2%.

Contributing to the predicted downward trend in costs will be a reduction in prices for building materials, products, accessories and services—a trend that has already set in, the widely known analyst said.

Other factors cited in the anticipated cost decline include:

- 1) *Competition* as supply inven-

tories and materials pile up again.

2) *Better productivity* in building trades labor and fewer bonuses. ("We neither expect nor recommend that building trades wages be reduced," Mr. Matthews said.)

3) *More efficient designing, planning and specifications* for all kinds of industrial buildings by architects and engineers.

This situation does not necessarily mean, Mr. Matthews pointed out, that it would be wise for an investor to postpone construction until the predicted adjustment takes place.

"Usually in industry," he explained, "man thinks of structure purely as shelter for plant out of whose operation comes profit. Thus construction is purely an instrumentality to set up plant, and the cost of construction is a detail whose total cost under long-term retirement may be far less important initially, and also long-term, than the loss of markets and profits faced while waiting for a modest correction in construction costs to come about."

Should Stop "Dilly-Dallying"

"If anything, the fact that the correction is to be modest ought to spur dilly-dallying potential investors into action. And it ought to reassure financial institutions enough to get them to



Thomas McCaffrey of Pittsburgh, president of the Society of Industrial Realtors, told delegates at the S.I.R. convention that cities must plan to provide land for expanding industries. Photo above is of an industrial development near Dallas laid out and sponsored by the Missouri-Kansas-Texas Railroad. As recommended by Mr. McCaffrey, the project is segregated from housing. (Story on Page 34.)



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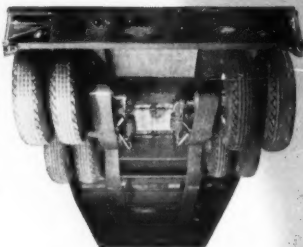
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It packs powerful advantages in a multi-purpose single unit. Write for full details and catalog.



A worms-eye view of the sturdy rear end and frame construction of the famous "T".

The rear end design of the Type "T" has proved so efficient it has been adopted as standard construction in Rogers Power-Lift Detachable Goose-neck Trailers.

EXPERIENCE
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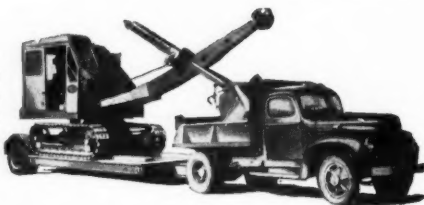
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Also of timely interest is this ROGERS Tag-A-Long trailer which makes a dump truck serve as a tractor and effects sizable savings for contractors.



shove the ghosts of construction loan collapse back into the closets whose doors, in some cases, have been held ajar by a jittery foot."

While the leveling off in the defense program will bring a gradual drop in government spending in mid-1953, Mr. Matthews said, it will not mean an over-all drop in business activity because a backlog of non-federal projects will move in. Among these, he cited highway construction, school, hospital and other institutional building, as well as "a tremendous reservoir of unemployed capital awaiting the signal that all is to be well in non-defense private industry."

Cities Should Plan for Industry

The same convention heard Thomas McCaffrey, Jr., of Pittsburgh, president of the Society of Industrial Realtors, declare that cities must provide the room ambitious industries need for expansion or they will "eventually lose the plants."

"If your city has no planned industrial sections, no open industrial land, you are going to be out of the picture automatically," he told the delegates. "Most corporation executives feel—and rightfully—that life is too short to buck antiquated zoning ordinances, punitive tax laws, or community indifference or hostility."

Set Plants and Housing Apart

He asserted that "by and large, factories and housing don't mix."

"Don't be misled by the beauty of a modern plant—and many of them are beautiful—and try to make it a community center like a city hall. If it is possible, have a protective strip around your industrial area, so your factories won't be heckled by homeowners."

"Generally, land that is suitable for industry is not good for residential development. At least, I don't think most people want to live along a railroad right-of-way, or near a gas storage plant, or a heavily-traveled truck route."

Mr. McCaffrey pointed to Pittsburgh as a "shining example" of wise planning. Speaking of the Golden Triangle, he said, "Five giant new office buildings, costing more than \$70 million, are being completed above the point park. Five new garages, which will park 3,800 cars, are being built in this area. A \$100-million Penn Lincoln limited access highway is being built around our Golden Triangle."

Specialty Trade Panels Advise B.R.A.B.

• Make Conservation Recommendations for Utility Systems

» THREE of the seven advisory panels recommending building conservation measures to the Building Research Advisory Board recently were composed of experts in the specialty trades. They were the panels on *Heating, Ventilating and Air Conditioning*; *Electrical Systems*; and *Plumbing*.

Out of their study into the problem, these panels made both general and specific recommendations and, in a number of instances, asked that intensified research be conducted to solve pertinent problems.

Some of the panels' conclusions were:

Heating, Ventilating and Air Conditioning—This panel found itself faced with the problem of determining how conservation of materials could be effected through wise selection of existing systems, development of new technical criteria and adherence to accepted standards. Some of the recommendations made were:

1) Critical materials can be conserved in distribution systems by using smaller pipes, retarding pipe corrosion, and utilizing material in greatest supply.

2) Use should be made of design criteria established by the American Society of Heating & Ventilating Engineers, and arbitrary design factors should be minimized. A.S.H. & V.E. was asked to review existing data and devise new calculations on heating loads and losses.

3) Provide for future boiler loads only if definitely known for installation within five years.

4) Wise selection of boilers should be made on basis of actual load rather than "rule-of-thumb."

(EDITOR'S NOTE: This is the last of a series of articles on the seven panel reports upon which the Building Research Advisory Board based its conservation recommendations to the Defense Production Authority. The full report contains 200 specific suggestions for saving materials, which both DPA and B.R.A.B. herald as a basis for long-term conservation. The full board does not necessarily approve all recommendations made by its panels, but "certifies to the competence and integrity of the panels" and asks careful study of their work.)

5) Careful analysis should be made of fire equipment, fuels and heating equipment so full capacity can be obtained with minimum sizes.

6) Ventilation requirements should be kept to a minimum and ventilation systems designed for the highest practicable velocity to save critical metals.

7) Air Conditioning should be installed only where essential processes and activities require it.

8) Architects and engineers should coordinate designs and advocate use of accepted design standards.

9) The U. S. Weather Bureau should prepare winter and summer weather data especially arranged for use of the building industry.

Electrical Systems—The panel on electrical systems was most concerned about the effect of interior wiring practices and site distribution upon materials conservation. Among other things, it noted that:

1) Critical materials and equipment could be saved by careful selection of wiring methods, raceways and types of conductors; by minimizing lighting intensities; by improving lighting design; and by utilizing higher voltage circuits.

2) Conservation could be effected if electrical engineers would utilize overhead construction, utilize alternate methods and materials for distribution, encourage the use of higher distribution voltages and select transformers and substations more carefully.

The panel asked for further research in electrolytic corrosion of underground cable and in the use of circuit neutrals for grounding.

Plumbing—This group explored the possibilities of materials savings by design changes and use of alternate metals. Some of its recommendations were:

1) That the National Plumbing Code be designated as a manual of design for plumbing and as a ceiling in times of emergency.

2) That piping design and layout be simplified.

3) That the National Bureau of Standards and other laboratories continue research on plumbing design and practices and on plastic tubing for water and drainage systems.

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4) That use of these materials be followed—service-weight cast iron soil pipe, non-metallic house sewer connections, types "L" and "K" copper tubing for corrosive water service and black cast iron and steel for drainage fittings and piping.

(Continued on next page)



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Hartford 15, Connecticut	

5) That the use of copper be reduced in shower pans and flashings.

6) That the federal government utilize the pressure drainage system recommended in Report BMS 66.

7) That the federal government expedite completion of federal specifications WWT-541A (emergency) "Plumbing Fixtures for Land Use."

8) That federal agencies specify use of iron plugs for cleanouts, small-sized flushometer valves, hard lead or cast iron floor flanges, 100 psi water control valves, and types "L" and "K" copper tubes for water service.

Building Construction Notes

- A \$30-million paper mill is being planned for Portsmouth, Ohio. Its structures must be strong enough to carry machinery weighing close to 50 million pounds. General contractor is Engineering Construction Corp., A.G.C., Chicago.

- Proceedings of the recent conference on "Condensation Control in Buildings" are available for \$3.50 from the Building Research Advisory Board, 2101 Constitution Ave., Washington, D. C. Builders at the two-day conference aired their experiences in overcoming the problem.

- Denver voters have approved a \$30-million bond issue to build new schools throughout the city.

- The Veterans Administration is publicizing an urgent need for all types of architects and engineers throughout the country for its hospital construction, conversion and modernization program.

- "Record Keeping for the Small Home Builder"—a recent publication of the Housing and Home Finance Agency, Washington, D. C., has been recommended for its complete but easily understood description of book-keeping methods for small contractors. The agency sells it for \$1.25.

- A conference on school building cost problems was held early this month in Washington, D. C. Jointly sponsored by the Chamber of Commerce of the U. S. and the U. S. Office of Education, the meeting attempted to cover questions of concern to educators, taxpayers and architects involved in school building programs.

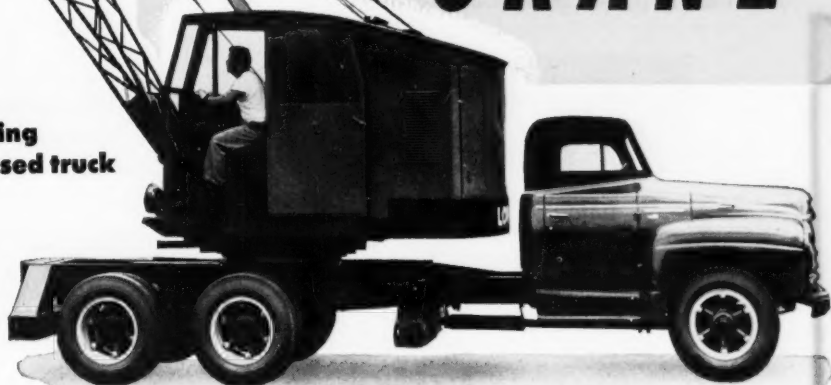
- Baltimore is seeking authority to borrow \$30 million for new schools.

A new "Baby" has arrived!



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**YOUR THEW-LORAIN
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IT'S HERE — FOR THE SMALL JOBS

Now you can put the biggest name in crane power to work on your smaller jobs that do not warrant the investment in high production machines. Now, with a Lorain TL-10, you can profitably mechanize, at low cost, that multitude of lifting, loading and material handling jobs ordinarily handled by high-cost labor.

IT'S HERE — AT BIG SAVINGS

You can mount the new TL-10 on your truck—new or used—and get all the advantages of high-speed mobility. Or, you can mount it on barge, pier, dock, bin, etc., to lift or load faster — anywhere. You get big machine quality at big dollar savings.

IT'S HERE — AND IT'S A LORAIN

The new Lorain "baby" is a "chip-off-the-old-block". It has the famous Lorain "TL" quality — and fast, smooth operation. And it is an off-spring of the world's first truck crane built by Thew-Lorain more than 30 years ago. The new TL-10 has a pedigree you can bank on!

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TURNs with POWER ON BOTH TRACKS

SWINGS FULL LOAD WITH THE GREATEST OF EASE—a tight turn with a lift gives the TD-24 a chance to show off its power.



International Steering system helps "Big Red" —the TD-24—do more work in less time

What's the pay-off for a crawler tractor?

The most work done per day.

What delivers the pay-off?

Superior speed and power—and fingertip steering to take advantage of that speed and power. Like this:

The operator of your Big Red TD-24 drops one track into low speed, and the huge crawler comes around, moving right along with its load, turning with power on both tracks!

The TD-24 makes gradual turns with power on both tracks, feathered turns of any degree, or pivot-turns—all with fingertip ease of control. Planet Power Steering lets the operator

turn while pulling heavy loads and also maneuver in close quarters. That's why the TD-24 is the most versatile of all crawlers.

Add this to the TD-24's tremendous power—more drawbar horsepower than any other crawler on the market—and you get what you want: more dirt moved, more work done per day.

Isn't that reason enough to put the TD-24 to work for you? Especially when it's backed by your International Industrial Distributor's complete service facilities. Get the details . . . you'll be a TD-24 man from then on in!

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TIGHT TURN WITH A BIG SCRAPER. "Big Red"—the International TD-24—pulls a big 25-yard scraper with a full load in close quarters on a road relocation job.

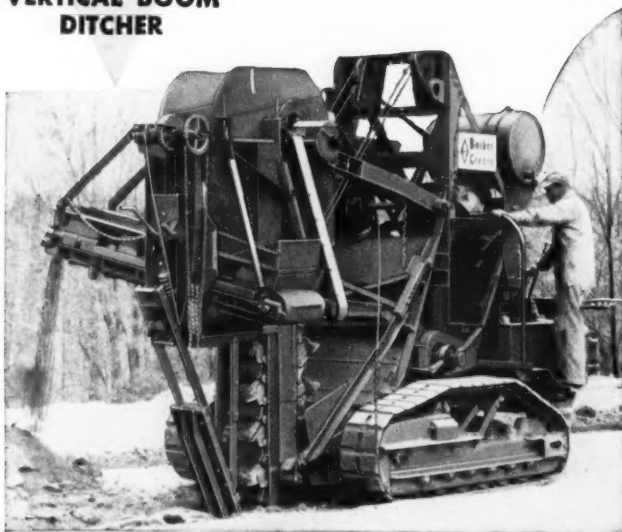


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MODEL
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**VERTICAL BOOM
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Grave Digging

DIGS CLEAN... leaves vertical walls . . . square cuts . . . eliminates most expensive handwork.

MILLING ACTION... closely spaced buckets pare small increments as a milling machine cuts metal.

OVERLOAD RELEASE... slips when overload occurs . . . automatically re-sets itself . . . no down time for replacing shear bolts, etc.

Only Barber-Greene offers so many proved ditcher advantages to save time and money on all trenching operations. For instance, the Vertical Boom means a compact, easily maneuvered machine: digs straight down, right up to walks, foundations, underground pipes, etc. . . . digs *all* the ditch . . . no expensive handwork required. The Vertical Boom stays down—the harder the digging, the harder the buckets hold it down. Cuts trench to 8'-3" depth, 24" wide.

Self-cleaning "kick-out" buckets operate in a vertical plane . . . produce the famous B-G mill-

ing action that cuts through coral, frozen ground, caliche and other formations that completely stop other ditchers.

Another time- and money-saving feature is the exclusive B-G overload release that slips on overload and automatically resets itself until the obstruction is removed or the operator stops machine—and then it re-sets itself for continued operation, protecting machine, hidden mains, cables, etc.

Plan to put the advantages of the B-G Model 44-C to work for you.

Barber-Greene

Aurora, Illinois, U. S. A.



Highway Construction Notes

• Gov. Johnston Murray of Oklahoma plugged for a system of toll roads throughout the nation last month at a meeting of the Southern Governors Conference in New Orleans. He said, "We are on the right track toward financing and building of roads and paying for them by those who use them."

Chamber of Commerce Studies Highways —24

• Oklahoma's state highway commission has approved a \$94-million program to be submitted to the legislature for the next two years. \$70 million would be put into new construction.

• Construction activity at Newark airport, closed for a time earlier this year after three fatal plane crashes, includes a new \$8.5-million terminal, over half finished, and a \$9-million runway to be completed soon.

• The National Highway Users Conference of Washington, D. C., has found that more than \$266 million in state highway use tax revenues last year were not used for highways.

• President Truman has asked that recommendations of the Doolittle Commission be adopted immediately. One is that future airports be built with parallel runways, rather than the traditional intersecting pattern.

• The Hearst newspapers have endorsed and are now campaigning for PAR (Project-Adequate Roads), a good-roads movement sprung recently by a combination of highway interests. Supporters of the effort include the American Trucking Associations, the National Highway Users Conference, the Asphalt Institute, and the Associated General Contractors of America.

• The government will pay substantially more than half the cost of highway building and improvement in the area around the new Pike County, Ohio, atomic energy plant. Ohio Highway Director Samuel Linzell has proposed a \$38-million program.

• Two engineering firms have been retained by the North Carolina State Turnpike Authority to conduct cost and feasibility surveys for a new toll superhighway. Marketing plans for \$200 million worth of toll bonds are being perfected.

\$575 Million of Road Funds Apportioned

» APPORTIONMENT of \$575 million authorized as 1953 federal aid to the states for highways has been announced by the U. S. Bureau of Public Roads. The funds include \$247.5 million for projects on the federal aid primary highway system, \$165 million for the secondary system and \$137.5 for federal aid in urban areas. New York will receive the largest amount—\$35.2 million—and Texas will get \$34.5 million and California, \$30.2 million. The bureau also announced the allotment of \$25 million for the National System of Interstate Highways. This is the first time that funds have been specifically earmarked for that system.

STATE	PRIMARY SYSTEM	SECONDARY ROADS	URBAN HIGHWAYS	INTERSTATE SYSTEM	TOTAL
Alabama.....	\$5,217,552	\$4,043,898	\$1,758,127	\$532,314	\$11,551,891
Arizona.....	3,653,303	2,487,990	521,973	371,953	7,035,219
Arkansas.....	4,064,364	3,254,652	750,706	414,318	8,484,040
California.....	11,273,990	5,808,764	11,929,002	1,154,002	30,165,758
Colorado.....	4,402,054	2,940,172	1,115,307	448,362	8,905,895
Connecticut.....	1,571,238	800,250	2,598,965	161,200	5,131,653
Delaware.....	1,200,375	800,250	275,217	121,250	2,397,092
Florida.....	3,903,613	2,550,784	2,406,316	398,804	9,259,517
Georgia.....	6,059,367	4,627,705	1,555,727	618,094	13,260,893
Idaho.....	3,033,324	2,132,917	258,267	308,736	5,733,244
Illinois.....	9,415,818	5,124,593	9,384,933	963,234	24,888,578
Indiana.....	5,833,702	4,020,406	3,210,481	593,500	13,660,089
Iowa.....	5,915,625	4,328,851	1,593,160	602,769	12,440,405
Kansas.....	5,950,798	4,165,742	1,201,297	603,853	11,983,630
Kentucky.....	4,496,820	3,736,080	1,393,596	459,028	10,085,524
Louisiana.....	3,812,021	2,759,226	1,967,149	389,373	8,927,771
Maine.....	2,061,148	1,474,586	560,854	210,101	4,306,689
Maryland.....	2,151,491	1,314,877	2,277,541	220,394	5,964,303
Massachusetts.....	3,102,505	1,149,426	5,585,538	318,932	10,156,401
Michigan.....	7,594,942	4,633,662	6,245,790	776,456	19,250,850
Minnesota.....	6,444,508	4,545,371	2,185,224	656,907	13,832,010
Mississippi.....	4,357,237	3,632,971	742,978	444,235	9,177,421
Missouri.....	7,127,588	4,822,289	3,304,889	726,976	15,981,742
Montana.....	4,957,442	3,409,119	315,997	504,310	9,186,868
Nebraska.....	4,751,285	3,369,779	787,065	483,651	9,391,760
Nevada.....	3,174,465	2,121,392	102,203	322,835	5,720,895
New Hampshire.....	1,200,375	800,250	397,419	121,250	2,519,294
New Jersey.....	3,175,262	1,071,050	5,874,465	326,438	10,447,215
New Mexico.....	4,003,539	2,749,711	440,412	407,468	7,601,130
New York.....	11,527,309	4,622,354	17,937,120	1,182,803	35,269,586
North Carolina.....	6,048,757	5,170,609	1,724,427	617,527	13,561,380
North Dakota.....	3,562,057	2,585,761	226,915	362,325	6,737,058
Ohio.....	8,609,919	5,240,955	7,765,686	880,712	22,497,272
Oklahoma.....	5,245,994	3,755,923	1,466,130	334,576	11,002,623
Oregon.....	4,198,212	2,933,480	1,076,050	427,813	8,635,555
Pennsylvania.....	9,582,120	5,699,723	10,159,251	981,618	26,422,712
Rhode Island.....	1,200,375	800,250	959,321	121,250	3,081,196
South Carolina.....	3,291,443	2,726,238	923,122	335,960	7,276,763
South Dakota.....	3,827,991	2,733,672	260,648	389,370	7,211,681
Tennessee.....	5,293,910	4,127,446	1,940,548	540,208	11,902,112
Texas.....	15,842,092	10,607,168	6,428,891	1,615,515	34,493,576
Utah.....	2,824,094	1,868,149	568,628	287,607	5,548,478
Vermont.....	1,200,375	800,250	208,950	121,250	2,330,825
Virginia.....	4,645,445	3,611,080	2,092,640	474,439	10,823,604
Washington.....	4,064,587	2,715,106	2,024,855	414,845	9,219,393
West Virginia.....	2,678,927	2,350,488	873,369	273,683	6,156,467
Wisconsin.....	5,802,073	4,047,423	2,627,837	591,968	13,069,301
Wyoming.....	3,033,021	2,068,220	145,912	310,556	5,578,409
Hawaii.....	1,200,375	800,250	541,260	2,451,885
District of Columbia.....	1,200,375	800,250	1,159,354	121,250	3,281,209
Puerto Rico.....	1,269,948	1,327,682	1,153,508	3,751,138

\$198-Million Road Plan Broached for D. C.

• Traffic to Capital City Spurs Big Programs in Nearby States

» STIRRED to action by a traffic dilemma which is daily becoming more troubling, top traffic experts of the Washington, D. C. area have declared an immediate need for over \$198 million worth of construction there.

To meet the threat of growing congestion in the nation's capital, a committee of highway officials from Maryland, Virginia and the District of Columbia broached a proposal last month for an independent authority empowered to borrow interest-free government funds for much-needed road construction.

Currently, the experts asserted, only \$8 million is being spent annually in the metropolitan area for capital improvements and highway construction is "eight to 10 years behind the actual need."

\$568 Million for Maryland

Maryland's highway department last month also revealed plans for a 12-year, half-billion-dollar program of road building and improvement.

The long-range scheme included recommendations for two toll roads leading into Washington and a loop highway around the city's suburban area.

These improvements to the Free State's road system would be financed by a one-cent increase in the gasoline tax (now five cents), increased auto registration fees, and a new bond issue of up to \$330 million.

See Only \$256-Million Income

The proposal has been billed as "the most comprehensive, long-range plan ever prepared" in Maryland. During the 12-year period, the state would undertake 3,741 mi. of highway work, in addition to improving 6,000 mi. of county-maintained roads, at a total cost of \$568 million. Because only about \$256 million of that amount could be met by highway revenues and federal aid, sponsors saw a need to raise up to \$330 million more by bond issue.

If the proposed toll routes are accepted, they would provide about \$50

G.M.C.'s \$194,000 Contest

In an endeavor to spark citizen interest in the nation's highway needs, General Motors Corp. has launched an essay contest for which it will put up \$194,000 in prize money. G.M.C. said that the awards were being made to "encourage all Americans to think about this critical situation" and to offer practical solutions.

million for the entire program.

At the same time Maryland announced her program, Virginia's State Highway Department revealed plans for a study of roads leading into Washington from that state. Wilbur Smith and Associates, consulting engineers of New Haven, Conn., will do the research and determine if toll road financing will fit into future programming. The highway department already has authority to construct toll roads, if necessary.

Tallamy Hits Highway Need

"We're paying the bill for good highways, but we aren't getting them," B. D. Tallamy, president of the American Association of State Highway Officials, declared last month at the Virginia Highway Conference.

"We're paying the bill in needless gasoline consumption, tire wear and excess depreciation," the highway official declared. "We're paying it in astronomical property damage bills and insurance rates. We're paying it in the cost of consumer goods. We're paying it in human lives."

These are costs which could be significantly reduced if the nation had an adequate highway system, Mr. Tallamy implied. He pointed out "obvious truths" to be considered with the highway problem:

"First, a highway system far superior to what we now have is absolutely essential to our . . . growth and prosperity as well as our defense.

"Second, we will never get the highway system we need without greatly increased . . . expenditures.

"Third, it is unlikely that these added expenditures can be wholly financed by traditional methods."

Acceptance of these truths by citizens, as well as by national leaders, would promote a solution of the highway problem, Mr. Tallamy felt.



Contractors and Highway Officials Meet in Joint Committee

The October 17 regional meeting of the Joint Cooperative Committee of the American Association of State Highway Officials and the Associated General Contractors of America brought together 50 key state highway officials and contractors. Those participating included: (seated left to right) C. J. James, chief engineer of the Louisiana Department of Highways (newly elected president of the S.A.S.H.O.); C. R. McMillan, chief highway commissioner in South Carolina; and (standing left to right) A. N. Carter, manager of the national A.G.C. highway division; G. W. James, vice president of T. L. James and Co., Ruston, La.; Hal H. Hale, executive secretary of the A.A.S.H.O.; and C. S. Mullen, chief engineer of the Virginia State Department of Highways. A report of the committee session was carried in the November issue of *THE CONSTRUCTOR*.



Top right: One of the turnarounds on the Idaho test road soon after asphaltting. The soil, climate and other conditions here made the site typical of western roads, it was felt. Contractor was Carl E. Nelson Co. of Logan, Utah.

Above: An engineer "plants" a Schae-vitz transformer in the surface of the test road where trucks will, by direction, run over it or past it. This electronic instrument measures the deflection of different layers of the road's construction. The photo below that is of a 9 in. by 9 in. sample removed from pavement surface for testing of oil content in the W.A.S.H.O. field laboratory. The researchers are taking every precaution to insure the reliability of the test. The road cost about \$200,000.



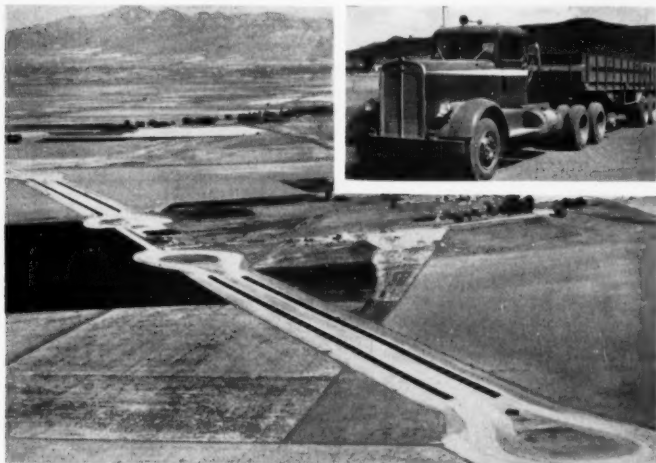
Construction Completed on Idaho Test Road

» **BIG TRUCKS** began running over the nation's newest test road last month to determine the effects of various axle loadings on different pavement thicknesses. Drivers are operating for 18 hours a day, six days a week, over the just-completed project of the Western Association of State Highway Officials in Idaho.

Two test loops with 1,900 ft. of two-lane straight-aways made up of asphalt pavements of different thick-

nesses were constructed there this summer for about \$200,000 by the Carl E. Nelson Co., A.G.C., contractor of Logan, Utah.

Delicate instruments installed in the pavement will measure the relative damages caused by various loads moving across the surface. The Highway Research Board of Washington, D. C., is conducting the test and plans to subject each section of the road to 200,000 truck runs.



Left: A retouched photo of the test route with turnarounds before construction was completed. Inset shows one of the trucks with 32,000-pound tandem axle load to be used in the test. Below: Workers build base for profilometer, used to detect "ruts" in road surface.



Giant tunnel boosts power for Swedish Industry

Swedish Government engineers have long studied a 108-ft. (33-meter) difference in elevation between Lake Vaxsjon and nearby Lake Varpen in Gavleborgs Province. Connect these two lakes with an artificial waterway, they said, and we can utilize the flow of water to greatly increase electrical power for the industries and homes of Donje and Bollnas cities.

By 1948, their plans for a sloping underground tail race tunnel, 36 ft. (11 meters) wide, 40 ft. (12 meters) high, and 2.9 miles (4700 meters) long, had been completed and approved. A. B. Skandinaviska Elverk, the government agency in charge, awarded the contract for exca-

vating 785,000 cu. yds. (600,000 m³) of solid gneiss-type rock to Nya Asfalt Aktiebolaget and Svenska Vag Aktiebolaget, both of Stockholm. Contractors, in turn, assigned 90% of all hauling on the 4-year task to a fleet of 5 bottom-dump Tournatrailers, and a new rear-dump, Model C Tournarocker.

When photo was taken last spring, 2½ years after the project had been started, a 1000-ft. (300-meter) centrally-located access tunnel and 1½ miles (2500 meters) or 53% of the main drain tunnel had been completed. Excavation was proceeding at the rate of 20 lineal feet (6 meters) or 2400 tons per day, with each of the 6 rubber-tired LeTourneau haul units moving 36 tons hourly over 2¼-mile (3600-meter) cycles. Loads averaged 18 tons each. Restricted load areas and haul over wet, narrow tunnel roads slowed cycle time for all units. Rough roads and extremely tough, sharply fragmented, heavy material were very punishing to shovel, Tournarocker, and Tournatrailer hauling units alike.

"In spite of these extremely severe conditions, repair and maintenance costs on our LeTourneau machines have been much less than we expected," reports S. Westby, Chief Project Engineer. "The Tournarocker is certainly superior to the other units. Its greatest advantage to us is its maneuverability and short (13 ft. 9 in. or 4.2 meter) turning radius, working as we now are within confined space."

"The machines are strong and simple in construction," adds Mechanical Foreman P. Olofsson, "therefore repairs and regular overhauls are easily done."

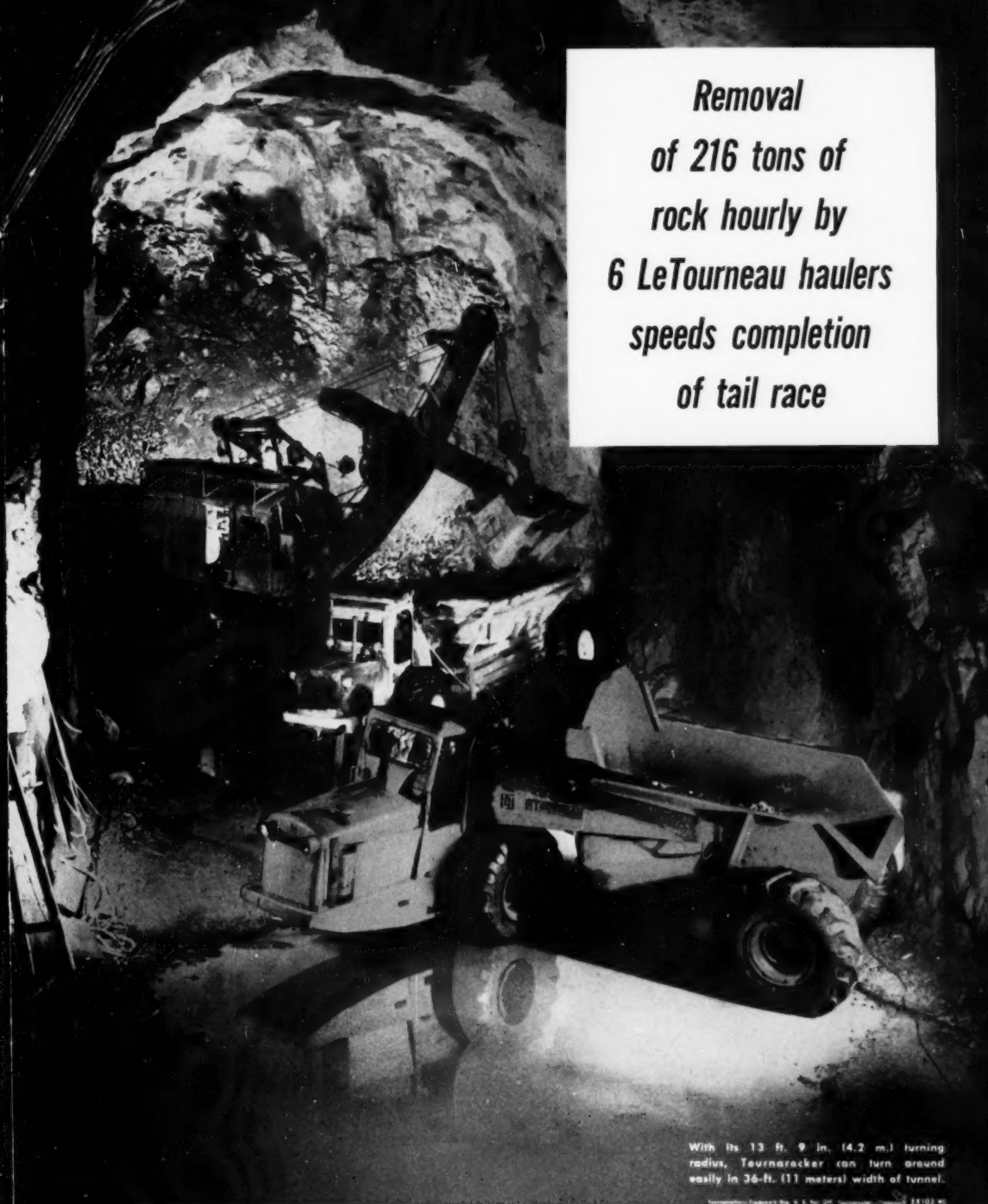
If you are interested in seeing how Tournarockers can cut your materials-hauling costs, get in touch with your LeTourneau Distributor. He'll be glad to show you the job-proved economies you can get with these 35 m.p.h. (56 km./h.) Rear-Dumps, as well as with interchangeable LeTourneau Bottom-Dump haulers. Rear-Dumps are available in 9, 18, 35, and 50-ton sizes; Bottom-Dumps in 18 and 35-ton models.



Says Operator Kurt Ytterberg, "Tournarocker is easy to handle and has plenty of power for a tough job like this."



HIGH-SPEED, RUBBER-TIRED EXCAVATING • HAULING • LIFTING EQUIPMENT



*Removal
of 216 tons of
rock hourly by
6 LeTourneau haulers
speeds completion
of tail race*

With its 13 ft. 9 in. (4.2 m.) turning radius, Teurnarocker can turn around easily in 36-ft. (11 meters) width of tunnel.

LeTourneau Equipment Co., Inc., Peoria, Ill. 61601

R. G. LeTOURNEAU, INC.
Peoria, Illinois



Contractor Finds Cable-Laying Rough Going across California's High Hills

» HANDLING 7-ton reels of cable in wild mountain country with grades up to 60% proved rugged work for the Underground Construction Co., A.G.C., Oakland, Calif., when the contractor began laying a 25-mi. section of telephone and telegraph lines through the famous Redwood Empire.

The firm put four Caterpillar D8 tractors into action as the work horses on the job. They bulldozed a clearing for the cable route, ripped trench for the line, hauled new reels into place, removed the empty reels, and joined as a team to pull the cable-laying device.

The cable reels handled by Underground were 88 in. in diameter and 46 in. wide, and they carried approximately 3,000 ft. of 1 $\frac{3}{4}$ -in. prefabricated cable weighing about 7 tons.

Dozers rammed and slashed their way across the high hills to clear the route, followed by rippers to make a trench for the cable.

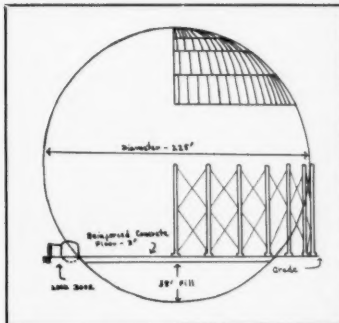
All four tractors ganged up to pull the cable layer after the preliminary work. When cable started running low on the reel, the lead tractor in the train unhitched and went after a new reel, carrying it on the dozer blade with the aid of a chain. In lugging full reels to the cable-laying train, it was necessary to back down the hills with them. This same tractor then picked up the empty reel and returned to its previous job of pulling the train.

Pictures on this page show different phases of the operation and the roughness of the terrain.



Seven-ton reels of cable prove to be bulky handling on this cable-laying job over mountainous California terrain. The contractor used a four-tractor train to pull this rig on the 25-mi. run.





The A.E.C.'s \$2,750,000 spherical laboratory to test atomic submarine rests on huge saucer-like foundation. Floor of sphere will be 3-ft.-thick concrete.



» CONTRACTORS on atomic installations undertake to construct some weird and original structures for research projects. On a 4,000-acre site near Syracuse, N. Y., the huge saucer-shaped foundation pictured above will carry one such facility—a 225-ft. steel sphere now being built for the Atomic Energy Commission to house a nuclear submarine power plant.

A Syracuse firm, Ardini and Pfau, has just completed the foundation, which is 179 ft. in diameter and 38 ft. deep. The design, calling for ring-type construction with counterfort column supports, was by Blaw-Knox Construction Co., A.G.C., Pittsburgh.

The welded-steel-plate sphere to be built upon this foundation will be 225

Contractor Pours Big Saucer Foundation

ft. in diameter. A ring of steel columns set on concrete outside the structure and reaching to the middle of the sphere will give further support to the building. Although structures of this design have been constructed previously for the chemical and petroleum industries, the one near Syracuse will be the largest.

The sphere plan was adopted to give additional protection to personnel during test operations of an atomic submarine power plant. In the remote event that all the laboratory's other controls should fail, the released radioactive materials would be held

inside the sphere, authorities believe.

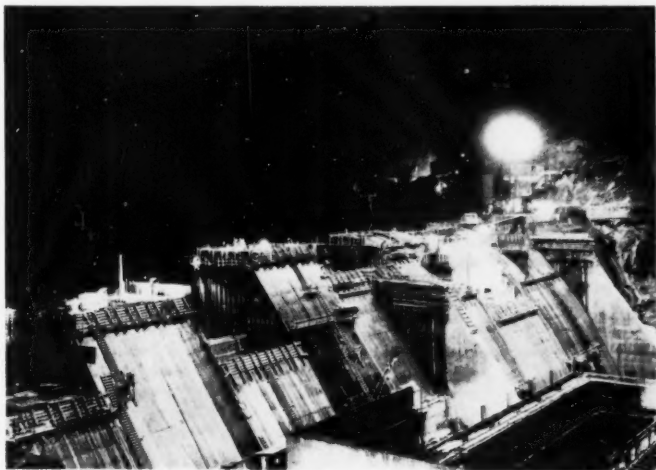
The steel plates forming the skin of the structure will be hoisted into place by a derrick mounted on top of a temporary steel tower which reaches 424 ft. above ground level. Every weld in the structure must be X-rayed to prevent leaks. The hull of the submarine will be assembled outside the building and skidded in just before the sphere is sealed tight except for access doors.

The Chicago Bridge and Iron Co. is building the sphere's superstructure. Excavation was by the Elmhurst Contracting Co., A.G.C., Corona, N. Y.

Night Work on Canyon Ferry

In order to complete construction of the Bureau of Reclamation's Canyon Ferry Dam on the Missouri River in Montana, Canyon Constructors of Los Angeles have been working throughout the night.

The first bucket of concrete was poured in September 1950 and, by the time the structure is completed next fall, about 400,000 cu. yds. of concrete will have been placed in the dam. The height of the dam will be 225 ft.; the crest length, 1,000 ft. A building to house the power plant can be seen under construction in right foreground of the picture here. The concrete mixing plant is on the left abutment of the dam near the bright spotlight. Workmen can be seen building forms for more concrete.



HOW TO HANDLE WET JOBS

#12 of a Series

SOUTH SHORE DESTRUCTOR PLANT Brooklyn, N. Y.

Excavating: D'Aquila Bros., for
Grove Shepherd Wilson & Krueger



PUMPING 5 MILLION GAL DAILY FOR NEARLY 6 MONTHS

PHOTO SHOWS small part of a dewatered area for receiving pit 200x 31 ft, the soil being extremely coarse sand with overburden of meadow mat. Prior to drainage, ground water table sometimes rose as high as 2 ft above natural ground, due to tides. Inleading ramp necessitated a 40-ft gap in header perimeter.

• Certainly no simple problem! Yet a Griffin Wellpoint system (still at work as this is written) has continuously handled 5,000,000 gal a day, maintaining this heavy burden for 6 months. Pumps have been swallowing vast quantities of salt water from Jamaica Bay 2000 ft away. Despite this, they have held up perfectly and standby capacity has never been used. That's Griffin dependability!



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Hammond, Ind. Houston, Tex. Jacksonville, Fla.

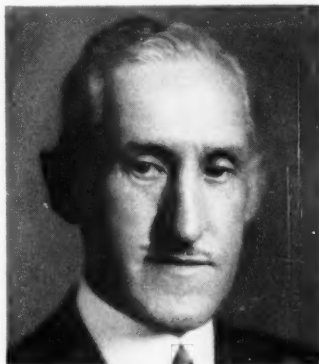
In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

HEAVY • RAILROAD

Kiewit and Palmer Win 1953 Moles Awards

» THE MOLES, a New York society of men engaged in construction of tunnels, subways, foundations and other such heavy construction, has named Peter Kiewit and Edward P. Palmer as winners of The Moles' award for 1953.

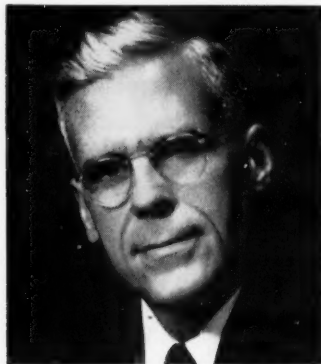
Presented for "outstanding achievement in construction," the honors are given to one member and to one non-member each year. In some construction circles, the award is considered the highest recognition for service to the American construction industry.



Edward P. Palmer, a veteran of 46 years in the construction industry, has worked on subways in New York City, foundations for numerous bridges (including the George Washington span across the Hudson River), and is now co-contractor for substructure work on the New York Central Railroad's new Harlem River crossing.

Mr. Palmer has long been one of the most construction-industry-minded men in the contracting business and has contributed substantially to the welfare of the industry. He is a past president of the A.G.C. and has served on the Labor Committee of that association for 13 years. He has been a director of the United States Chamber of Commerce for six years and an industry representative on the National Joint Board for the Settlement of Jurisdictional Disputes in the Construction Industry.

A graduate of Swarthmore College, Mr. Palmer also is a member of the American Society of Civil Engineers.



Peter Kiewit, president of Peter Kiewit Sons' Co., A.G.C., Omaha, made national news recently when his firm was awarded the contract for a \$1.2-billion atomic energy plant in Ohio. His reputation as a skilled contractor rests on such other achievements as Project Bluejay (a huge Air Force base in northern Greenland), work on the New Jersey Turnpike, Bull Shoals Dam, Hungry Horse Dam, Garrison Dam, Fort Gibson Dam, Philpott Dam and Boysen Dam. In addition to these jobs, which his concern tackled either singly or in joint venture, Mr. Kiewit has undertaken projects in South America, Alaska, Guam and the Hawaiian Islands.

In 1920, Kiewit started work as a bricklayer for the company his father founded in Omaha in 1875. Only 10 years later, he was president of the firm, and in the following 22 years, he increased the company's net worth from about \$500,000 to its present worth of about \$17 million.

Another Huge Aluminum Project—Plans for construction soon of another vast hydro-electric project and aluminum plant, similar in many respects to the half-billion-dollar job reported in last month's *CONSTRUCTOR*, have been revealed by the Aluminum Co. of America. Some \$400 million would be expended for a dam, a 13-mi.-long tunnel, two powerhouses, and a smelter in Alaska. The Taiya Power Project would take four years to complete.

Heavy Construction Notes

- A stockholders-report type of financial statement just issued by the Bureau of Reclamation (covering the agency's activities for the past 50 years) shows that there are now 83 projects under construction and the face value of construction contracts outstanding is over \$369 million.
- The Pennsylvania Railroad plans to spend \$47 million in the next three years on a new freight yard at Conway, Pa. (\$34 million), a new freight car repair shop at Hollidaysburg, Pa. (\$12 million), and other facilities.
- California's State Water Project Authority plans to ask the legislature for \$750,000 more to continue investigation of the proposed billion-dollar Feather River Project. The lawmakers appropriated \$800,000 this year.
- The giant Bokaro Thermal Power Plant on the Damodar River in India, a vital part of "India's TVA" is now nearing construction, according to reports by the Kuljian Corp., A.G.C., Philadelphia, engineers and constructors of the \$35-million project.
- Due to careful soil analysis, the Daniel Construction Co., A.G.C., Greenville, S. C., was able to excavate for a new power plant in such a way as to save \$158,000 in foundation costs. The contractor went down 43 ft. below the surface of a canal only 20 ft. from the nearest point of the excavation without waterproof metal piling.
- A planning report has been made for flood control project in the Santa Maria Basin, 130 mi. northwest of Los Angeles, which would call for construction of 184-ft.-high Vaquero Dam at a cost of \$24½ million.
- Reality of a proposed \$91-million bridge over the Delaware River near South Philadelphia moved closer last month when a \$50,000 appropriation was made to the Pennsylvania Highway Department for survey of approaches.
- The Army Board of Engineers for Rivers and Harbors has recommended \$126.7 million worth of improvements for the Chesapeake and Delaware Canal and the Hudson River. Channel widening, anchorages, new bridges, dredging, and straightening out some bends account for the estimated cost of the projects.

Up!

...Production goes up
as industrial accidents

go down—costs go down

as operations become

safer. An Employers

Mutuals Team, cooperating

with your organization in

a practical safety program,

can help mightily in attaining

these goals set by today's critical

economy.... "All this and lower insurance

costs, too" is the customary experience

of our policyholder-owners!



The Employers Mutuals Team



EMPLOYERS MUTUALS

of WAUSAU

Home Office: Wausau, Wisconsin

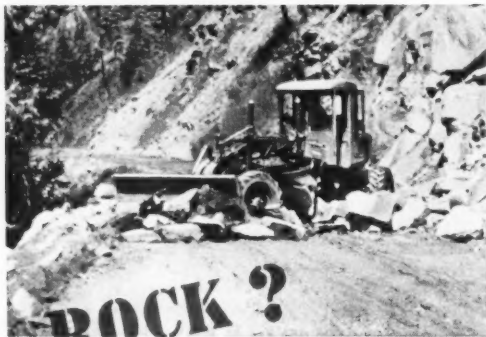
Offices in principal cities . . . Consult your telephone directory

Employers Mutuals write: Workmen's Compensation-Public Liability-Automobile-Group Health and Accident-Burglary-Plate Glass-Fidelity Bonds-and other casualty insurance. Fire-Extended Coverage-Inland Marine-and allied lines. All policies are nonassessable.



EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
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what's **YOUR** headache.



ROCK ?

On an A-W Power Grader the bulldozer becomes a rough, tough tool . . . extra sturdy to match the extra power of ALL-WHEEL DRIVE, and fully up to this job of clearing a rock slide.



SAND ?

Live, climbing power at both ends of the machine keeps it bulldozing steadily through sand where an ordinary grader would find it difficult to travel, let alone work.



EARTH ?

On this railroad fill, there is plenty of power and traction to use both blades, with their fingertip hydraulic controls for quick and easy, precision operation.



TREES ?

First, the grader blade with its deep-plowing ability is socked into the ground to undercut the tree roots; then the bulldozer backed by the superpower of ALL-WHEEL DRIVE finishes the job.

The traction and maneuverability of A-W Power Graders make them ideal tools for the Bulldozing jobs found on grading and construction work. Heavily made and reinforced to accommodate the extra power of All-Wheel Drive and Steer, the Bulldozer is an essential for many jobs — a time and money-saver for dozens of others.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U. S. A.

Subsidiary of Baldwin-Lima-Hamilton Corporation



» THE PRESENT deferment policy, coupled with the G.I. Bill for Korean veterans, should help the construction industry stabilize its apprenticeship program, W. F. Patterson, director of the Bureau of Apprenticeship, announced at an Evansville, Ind., building trades meeting recently.



Mr. Patterson

He also hinted that enough apprentices may be available to bring their number up to the quota needed for the foreseeable future.

The ceremony, honoring 27 apprentices who had completed their training in five crafts, was sponsored by five contractor associations and five local trade unions. They include the Associated Building Contractors, Master Plumb-

Apprenticeship Program Better Stabilized

• Patterson Cites Help From G.I. Bill, Deferment Program

bers Association, National Electrical Contractors Association, Evansville Chapter of The Associated General Contractors of America and the following A. F. of L. unions: Sheet Metal Workers, Carpenters, Painters, Plumbers and Steamfitters and Electrical Workers, Local 16.

"With a million or more men already released or discharged and with the benefits available to those who want to enter apprenticeship, we should be able to build up the ranks in the apprenticeship program without resorting to deferments," Mr. Patterson continued.

Apprentices Decreasing

"A couple of years ago the number of apprentices in training was sufficiently large so that the number completing training was enough to fill the

gaps in the skilled-worker ranks caused by losses from death and other normal causes. Since then, however, the number of apprentices employed has been decreasing. We do not believe that this decrease is in any way an indication of complacency on the part of the contractors or the labor unions of the joint apprenticeship committees," he said.

"It came about largely as the result of the build-up of our military forces and our defense production. However, it is clear that the manpower needs of the military have had a far greater effect on the apprentice training program than anything else. Apprentices were drafted, prospective apprentices were restless and the whole atmosphere was unsettled for young people as it affected their planning for the future."

As for the construction industry, Mr. Patterson said that during the past few years contractors have been faced with a two-fold program which requires more on-site workers than ever before in history. Not only has there been increased homebuilding but there has also been the expansion of the nation's industrial plant. To substantiate this statement, Mr. Patterson quoted Bureau of Labor statistics which showed that over 2.7 million on-site workers were on the job in September.

He predicted that when the peak of industrial plant building is reached, there will be renewed residential construction.

Veterans Best Prospects

Referring to the deferment program again, Mr. Patterson said that while it is designed to give immediate relief, it cannot be considered for long-range needs. Authorities are keeping a watchful eye on the manpower pool available for military service and if they find that too many persons are being deferred in relation to those available for immediate call to service, then the deferment policies will have to be made tighter.

Another advantage in bringing veterans into the apprentice picture is that they have had their military service and unless the international situation becomes much worse, they will be available as journeymen, whereas deferred apprentices will still have their military training to undergo.

Apprentices Decline 4.3%

Apprentice training for construction trades in the 2nd quarter of the year fell off 4.3% from the previous quarter, the Bureau of Apprenticeship reported recently.

At the end of March active apprentices in training totalled 80,116 and by the end of June the number had dropped to 76,612.

Roofers and structural iron workers were the only construction trades out of the dozen surveyed by the bureau to show an increase in the number of apprentices training at the end of the 2nd quarter. This resulted from few completions during the quarter.

Carpenters, Plumbers Decline

Carpenters decreased from 22,976 to 21,154 for the period, plumbers and pipefitters dropped from 17,023 to 16,517 and brick, stone and tile setters fell from 7,885 in April to 7,398 in June.

Other trades with minor decreases in apprentices were cement masons, glaziers, painters, plasterers, sheet metal workers, electricians and general construction workers.

The beginning figure of 80,116 differs from the end figure of the preceding quarterly report by 4,909, the result of more complete data received after 1st quarter reports had been made. There is still partial data from four states and no data from one state.

Existing Agencies Favored

The Federal Committee on Apprenticeship recently urged the use of established apprenticeship agencies in approving schools offering apprenticeship and similar on-the-job training to veterans under the Korean G.I. Bill.

A resolution by the committee states in part: "It is not desirable, in view of the long-range welfare of the veteran, to duplicate the functions and services of established apprenticeship agencies."

It also pointed out that apprentice training involves wages, hours, working conditions, employer-employee relations and other matters of principal concern to management and labor.

State and federal apprenticeship agencies have been established to provide the assistance required to help conduct training programs of large numbers of apprentices.

In the past, standards and procedures developed by these agencies have proven sound and have been adapted to other on-the-job training to prevent abuses, the committee added.

All-time high of 462 Joint Bricklayer Apprentice Committees are encouraging the training of bricklayer apprentices in every state in the nation, the Structural Clay Products Institute reports.

By-passing Sherman Hill grade

How a relocation job on the U.P. will speed west-bound rail traffic

For years the Union Pacific's long grade over 8,014-foot Sherman Hill in south-eastern Wyoming has been known as an engine-killer. It was to boost trains up that slope west of Cheyenne that U. P. built the famous "Big Boy" locomotives. Now the mighty helper engines are headed for the same fate as the buffalo. A new 42-mile main line, with easier grades, is being built to the south.

Railroad relocation accounts for a considerable share of U. S. construction right now. It is a natural consequence of the swing to Diesel locomotives—longer trains—longer passing tracks. The roads are doing some of this work with their own off-track equipment. In other cases, where more earthmoving must be done, construction firms are being called in. The Union Pacific project is probably the biggest of the lot. It will cost \$16,000,000 and involves the moving of 2,500,000 yards of rock, 4,000,000 yards of earth.

When the two-year job is finished, the U. P. expects to cut 15 minutes from its west-bound running time and use main line locomotives all the way through.

The contractors, Morrison-Knudsen Company, Inc., have assembled a big array of "Caterpillar" equipment on this job. "Cat" Diesel Engines power the shovels and compressors. Big yellow D8 Tractors, Bulldozers and Scrapers handle the shorter hauls. And speedy "Caterpillar" DW20 wheel-type Tractors, with No. 20 Scrapers, make eight round trips per hour over a one-mile haul distance.

These machines are constructing 111 major fills, up to 164 feet in height; installing hundreds of drainage culverts;



A "Cat" Diesel D397 Engine provides the logging power for this Manitowoc 5-yard shovel, making a cut for the new U. P. main line near Sherman Hill, Wyoming.

Worthington compressors, mounted on sturdy "Caterpillar" D8 Tractors, drill blast holes in rock for Morrison-Knudsen Co., Inc.

and blasting through solid red granite to make cuts, one of them 140 feet deep and requiring the removal of 350,000 cubic yards of rock.

Morrison-Knudsen's reputation for putting big contracts through on time has a solid foundation in the tough, dependable "Caterpillar" machines that make up such a large proportion of the firm's equipment.

One of Morrison-Knudsen's big, husky yellow "Caterpillar" DW20s and No. 20 Scrapers picks up a 20-yard load for a fast run to the fill.



CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

» **ACCIDENTS** last year in the construction industry were fewer but more severe than in 1950, the Bureau of Labor Statistics reports. For the same period, manufacturing industries showed a slight increase in number as well as severity of accidents.

In 1951 the construction industry suffered disabling accidents at the rate of 39.3 for every million employee-hours worked and at a severity rate of 4.2 days of disability per thousand man-hours of exposure. The year before, the industry had a frequency rate of 41 and a severity rate of 3.8.

Similar figures for manufacturing were 14.7 (freq.) and 1.2 (sev.) in 1950 and 15.5 (freq.) and 1.3 (sev.) in 1951.

Building, Heavy Firms Best

General contractors, with the exception of those who do highway and street construction, improved their safety records over the previous year. Building contractors showed a frequency of 45.4 in 1950 as compared with 39.6 last year. Their severity rate was 2.9 in 1950 and 2.8 last year. Heavy contractors, who registered a frequency rate of 42.8 and severity rate of 6.4 in 1950, improved their records slightly last year with 42.3 and 4.4 marks for frequency and severity respectively.

Highway and street contractors last year showed accident and severity scores of 50.8 and 8.2. The frequency score is highest in the industry and the severity rate is second only to structural steel erection for the period. In 1950 the marks respectively were 44.8 and 4.0.

The Bureau, which compiles these figures annually, lumps deaths and permanent total disabilities under the same classification. Permanent total disabilities are defined as injuries that result in the total disuse of parts of the body, such as complete blindness, loss of both hands or legs and the like.

Accidents suffered in general contracting in this category remained the same at .7 per 1 million man-hours of exposure. This means that during 1950 and 1951 less than one worker employed by general contractors every million work-hours was killed or permanently disabled. For construction in general there was a slight rise from .7 in 1950 to .8 last year.

When this figure is broken down among general contractors, builders and highway constructors showed slight increases which are offset by

Accidents Fewer but More Severe in 1951

• Building and Heavy Contractors Improve 1950 Records

fewer deaths and total disabling accidents by the heavy firms.

	1950	1951
Builders4	.6
Highway7	.8
Heavy	1.3	1.0

Special trades contractors on the average are slightly below general contractors in frequency and severity scores. But Roofing and sheet metal work, along with structural steel erection was just as hazardous last year.

TRADE	FREQ.	SEV.
Electrical Work.....	25.7	4.6
Masonry, Stone Work...	40.7	4.8
Painting, Decorating....	23.5	4.6
Plastering, Lathing.....	38.2	.7
Plumbing, Heating	26.8	1.2
Roofing, Sheet Metal...	43.7	4.2
Struct. Steel Erection...	48.2	11.8
Terrazzo, Tile, Marble...	23.9	—

Installation of Other Building

Equipment	29.6	—
Other Special Trades...	39.0	3.3

In industries outside construction, logging still remained one of the most hazardous types of work. In 1950 the frequency rate was 96.5 and the severity rate was 12.9. Last year the frequency increased to 98.9 while the severity dropped to 10.3.

Other dangerous occupations for the two-year period are as follows: Planing mills, 43.5 (f), 5.8 (s) in 1950 and 48.1 (f), 4.2 (s) in 1951; saw mills, 61.4 (f), 4.9 (s) in 1950 and 60.2 (f), 5.7 (s) in 1951; structural clay products, 35.9 (f), 2.2 (s) in 1950 and 39.8 (f), 1.9 (s) in 1952.

(National Safety Council figures for 1951 are much lower, being based on fewer reports from member firms.)

"Personal Interest" in Safety Stressed

• Surety Executive Addresses Pennsylvania Builders Chapter

» **CONTRACTORS** should show the same personal interest in safety as they do in material, labor and job progress, a surety company executive told the recent 14th Annual Convention of the Pennsylvania Builders Chapter, A.G.C., in Harrisburg.

James V. Walsh, field supervisor of the Aetna Casualty and Surety Co., said that mere "lip service" to safety is not enough for "successful contractors know by experience that personal planning and personal supervision of safety help to maintain schedules, keep personnel active on jobs, improve industrial relations and make a profit."

Mr. Walsh stressed the important part that direct and indirect costs of accidents play in completing jobs on time and at a profit and in successfully bidding on future contracts. He reminded the meeting that insurance costs can be reduced through loss prevention which gives the contractor an advantage in bidding.

A basic safety problem, he added, is to train the entire organization to know what unsafe conditions and practices may be expected on each particular job, so that when they occur, they will be detected and corrected before causing accidents.

"It is a well-established principle of loss prevention engineering that the same unsafe condition or practice will occur many times before it causes an accident." The time to fix it, he continued, is during this "period of warning."

Cites Constructor Box

On the subject of "good housekeeping", Mr. Walsh referred to a recent "Indirect Cost" item that appears monthly in *THE CONSTRUCTOR*. The injured man in the example, an iron worker by trade, stumbled over a billet he had left lying on his scaffold. He fell about 12 feet, injuring his shoulder and spraining his ankle. As he tried to break his fall he grabbed the end of a suspended truss which swung against a 15-ft. cinder block wall, toppling it onto three parked cars. The truss was damaged more by an operator who tried to lower it into position too rapidly.

Compensation and medical costs of the accident, Mr. Walsh quoted, were \$60. But the indirect cost to the contractor was 20 times this amount, all because of a misplaced billet. He blamed the accident on the super-

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TO ITS WORK**



PARTS AND SERVICE EVERYWHERE

Continental Motors Corporation

MUSKEGON, MICHIGAN

ACCIDENT PREVENTION

intendent who apparently did not enforce the "good housekeeping" rule on his project.

It is impossible to control accidents unless safe methods, rules and regulations are enforced, he added. And the best way to enforce safety principles is for top management to associate them at all times with the technical know-how of contracting and to hold the superintendents responsible for safety results.

The greatest assistance in loss prevention can be provided by top management which should make it crystal clear to the entire organization that it is fully aware of the intimate details of safety problems and holds employees responsible for safety as well as for completing the job on time and at a profit.

Indirect Cost of Accidents

The accident: An employee, leaning over the safety rail of an elevator well and calling to workers on the ground for more material, was struck a glancing blow on the forehead by the platform descending from the floor above. He was saved from further injury by another employee standing nearby who caught him before his head struck a brick wall.

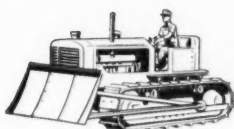
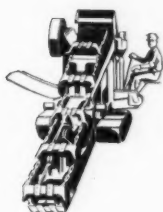
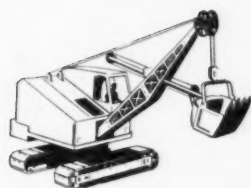
Direct cost: Medical aid \$57; compensation \$100.

Proximate results: Though the injury to the worker was slight, he had to be lowered to the ground and placed in an awaiting ambulance. The men did no work while this was going on and even after they returned to their jobs half an hour later, they were upset so that most of them did little work for the rest of the day.

Indirect cost: It is hard to establish accurately just how many man-hours were lost as the result of the accident. It is safe to say that had the employee shown more caution then the 75 men would have worked a complete day and not upset the work schedule of the contractor.

Prevention: The safety railing erected at each level of the hoist probably saved the man from plunging to the bottom of the elevator. However, if he had observed one rule he could have avoided the accident. The rule is: "If you can't see the cables, look out, the platform is above you."

*Equipment
Lives Longer
with
HYATTS
*built in**



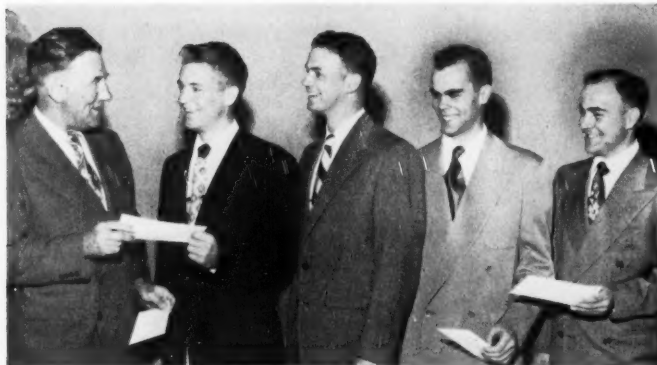
MANY of the leading manufacturers of contractors' equipment "build in" Hyatt Roller Bearings for sound dollar-and-cents reasons.

Hyatts help the equipment to operate smoother and longer with less cost for power, lubrication and maintenance.

To tackle the toughest jobs, on the roughest terrain, Hyatts for years have been the preferred roller bearings in such equipment as power shovels, tractors, trenchers, dump-trucks, scraper-loaders, road rollers and portable compressors.

And in all other industrial, agricultural and transportation equipment the name Hyatt is the guide to roller bearings of outstanding performance. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS



Colorado Contractors Grant Scholarships

• Hope to Interest Engineering Students in Construction Field

» THE COLORADO Contractors Association, a chapter of The Associated General Contractors of America, has developed a scholarship program for aspiring engineers in heavy and highway construction and made the first awards this year.

Under the plan, the contractors have authorized \$1,000 from chapter funds to provide four \$250-scholarships this year. Next year, \$2,000 for eight grants will be appropriated.

Provisions of the program are that recipients must be enrolled in one of the two Colorado schools offering civil engineering degrees, must be residents of the state and not already

under other scholarship plans. This year, the \$250-scholarships have been tendered to four junior classmen: James M. Bell and Gerald B. McRae of Colorado A. & M. College, Fort Collins, and James M. Coffey and Addison F. Smith of the University of Colorado, Boulder.

The four young men were selected for their interest in heavy and highway construction and contracting (as well as some past construction experience), for active participation in extra-curricular college activities, for distinction in scholarship, for personal qualities and on the basis of need.

At a special dinner in their honor

recently, the engineering students were given the awards by Dan G. Bell, president of the Colorado Contractors Association, with congratulations on their scholastic achievements and the hope that the scholarships would enable them to devote additional time and effort to their college work and activities.

Dan G. Bell, president of the Colorado Contractors Association, presents the chapter's first scholarships to four engineering students—(left to right) James M. Coffey, Addison F. Smith, James M. Bell and Gerald McRae.

The young men have been promised summer employment with one of the member firms or with an engineering organization or both. They will not be obligated to work in the field of construction if they do not choose to after graduation, although it is the hope of the contractors that they will.

Education Briefs

• The Master Builders of Iowa, a chapter of The Associated General Contractors of America, has announced the award of two \$500-scholarships—one to James M. Bentley, a student of architectural engineering at Iowa State College, and the other to Edward I. Levin, a student of civil engineering at the State University of Iowa.

• The Houston Chapter of The Associated General Contractors of America is cooperating with the Real Estate Board, the Houston Association of Home Builders and the Retail Lumber Dealers' Association in sponsoring a degree program in building at the University of Houston.

• A bequest of \$150,000 received by the American Institute of Architects will be added to the organization's fund for scholarships and education, the Institute reported last month. The gift, made by the widow of Galen Perrett, architect and former A.I.A. member, will swell the Institute's total educational endowment to about \$750,000. Income from the funds is used to aid advanced study and research in architecture.

• This is the eighth year that Purdue University has offered a two-year course in Building Construction Technology at its Indianapolis Center.

The training prepares student for technical service in the industry.

Columbia Teaches Construction Management

• Program for Key Supervisory Personnel Leads to Degree

» A COMPLETE curriculum leading to a Bachelor of Science degree in Construction Management is being offered for the first time by Columbia University in New York City.

The program is designed as preparation for administrative or supervisory responsibilities in the construction industry; planning, administration and control in the office or supervision in the field; or for positions of responsibility in such related fields as manufacture and distribution of building materials and supplies.

The new curriculum is a joint project of the School of General Studies, School of Business, School of Architecture, School of Law and School of Engineering at Columbia University. Professor Samuel R. Moore, of the

School of Architecture, was responsible for its development.

The student of construction management is given a broad background in social sciences, English, mathematics and modern languages. The bulk of his specialized training is in courses dealing with materials and methods of traditional and contemporary construction practices; strength of materials; structural design; planning in wood, steel, and reinforced concrete; quantity and cost estimating; finance; accounting; labor law and collective bargaining.

Leopold Arnaud, dean of the School of Architecture, reports that most of the students thus far enrolled in the new curriculum are also working in the construction field.



Vapor rises as temperatures range between freezing and zero

LESS OVERTIME with LEHIGH EARLY STRENGTH CEMENT

Though overtime often saves money for the contractor and ups the earnings of workers, it doesn't always pay off. Excessive overtime results in worker fatigue, reduced efficiency, slowed down production. Here's a case in point:

In the construction of the new Allentown plant of Willard Storage Battery Company, the concrete floors were being poured at below freezing temperatures. Cement finishers had to put in long hours of overtime. Progress soon slowed down.

Then the contractor changed to Lehigh Early Strength Cement for earlier hardening, much less bleeding. Result: Finishing got off to an earlier start . . . and men were off the job by 6:00 P.M.

Try Lehigh Early Strength Cement on your next winter job. It will help you speed operations, cut down overtime and curing costs.

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Contractor:
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Architect:
H. P. EVERETT & ASSOCIATES
Allentown, Pa.
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STANDARD FORMS

COVERING IMPORTANT CONTRACTING PROCEDURE



Prepared by The Associated General Contractors of America and Cooperating Bodies

Order No.	MANUALS	Per Copy	Per Dozen	Per 100
1.	A.G.C. Manual (Contains documents listed below: Nos. 3-30, inclusive, and Nos. 34, 35, 36, 36a, 37, 38)	\$5.00	\$50.00	
2.	Accident Prevention Manual (Revised and enlarged 1949)	3.00	30.00	\$210.00
CONTRACTS				
3.	Standard Contract for Engineering Construction issued by the Joint Conference on Standard Construction Contracts	.25	2.75	20.00
4.	Standard Building Contract of the American Institute of Architects—Revised 6th Edition	.50		47.50
5.	Subcontract form—American Institute of Architects—Revised 5th Edition	.10		9.50
6.	Standard Form of Acceptance of Subcontractor's Proposal	.10		9.50
7.	Standard Government Contract	.10	.50	4.00
8.	A.G.C. Cost Plus a Fee Contract	.10	.50	2.50
9.	A.I.A. Cost Plus a Fee Agreement between Contractor and Owner—Revised 6th Edition	.10		
11.	Equipment Rental Agreement	.10	.50	3.00
12.	A.G.C. Proposal Form	.10	.50	3.00
ESTIMATING AND ACCOUNTING				
13.	A.I.A. Accounting Form #701 "Change Order"	.20	1.80	12.00
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24.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover, Engineering Construction (For Qualifying Before Bidding)	.20	1.80	12.00
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29.	Insurance Check List	.10	1.00	5.00
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35.	A.G.C. Code of Ethical Conduct	.10	.50	3.00
36.	Concrete Mixer Standards		Single copies—no charge; quantity prices on application.	
36a.	Contractors' Pump Standards			
37.	A.I.A. Standard Form of Arbitration Procedure			
38.	Suggested Guide to Bidding Procedure			



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	Metal Seals and Decals: 20% discount for orders of more than 50; 40% discount for orders of 200 or more.	

43. A.G.C. SOCIAL SECURITY FORMS

Form SS1: Application for Employment; Form SS2: Employees' History Record; Form SS3: Employees' Employment and Earnings; Form SS4: Payroll. List of prices and styles will be furnished to A.G.C. members on request.

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Gentlemen: Enclosed find check for \$_____ for which please send materials as ordered by number herewith.

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Dec. 1952

» THE PENNSYLVANIA Builders Chapter of the A.G.C. held its 14th Annual Convention Oct. 10, in Harrisburg, attended by 400 delegates.

During the morning meeting the chapter elected new officers for the coming year. They are: Stanford C. Seiple, Stanford Seiple Co., Sunbury, president; Paul E. White, B. D. and W., Inc., Carlisle, vice president; R. S.

Penna. Builders Improve Safety Activity

• Seiple 1953 President; Industry Panel Featured

Noonan, R. S. Noonan, Inc., York, re-elected secretary-treasurer and George M. Schmeltzer, re-elected executive director.

The Accident Prevention Committee, which made its report in the morning session, announced a 25% increase

over last year in members participating in the national A.G.C.'s accident prevention program. This means that 92% of the chapter's members are cooperating.

At the Detroit convention last spring Mr. Schmeltzer was awarded the annual chapter secretary award for work to reduce accidents. This year, the chapter has developed and distributed more than 1,000 pieces of safety literature.

The meeting praised H. B. Alexander, chairman of the National A.G.C. Accident Prevention Committee, for his "tireless" work for safety on the job.

Panel Discussion Held

The afternoon portion was taken up largely with a panel discussion entitled "Meet the Building Industry," moderated by Welton A. Snow, manager, Building Division, national A.G.C.

Participants in the forum were James Walsh, field supervisor, Aetna Casualty and Insurance Co., Hartford, representing the insurer; Fred Palmer, vice-president, Provident Trust Co., Philadelphia, representing the banker; James M. Henderson, vice-president, Fidelity and Deposit Co. of Maryland, New York, representing the surety; F. Clifton Pearce, president, Pennsylvania Society of Professional Engineers, Scranton, representing the architect, and Warren W. Holmes, acting executive director, General State Authority of Pennsylvania, Harrisburg, as the client.

Board of Directors

The new Board of Directors was named as follows: Robert D. Cremer; A. E. Upton, retiring president; Mr. Noonan; H. B. Alexander; C. Robert Austin; Foster H. Berkibile; Boyd H. Kline; L. Verne Lacy; Ellsworth C. Machin; S. G. Mastriani; Joseph H. Orr; Ralph M. Ritter; Mr. Seiple; F. J. Cuppels; A. Carl Warner; Mr. White and S. H. Evert.

Highlighting the evening dinner and entertainment program was the presentation of H. B. Alexander & Son, Inc. Accident Prevention Trophy to C. C. Davis, C. C. Davis Construction Co., New Cumberland, Pa., for having the best accident prevention record this past year.



Officers for 1953—left to right: Raymond S. Noonan, secretary-treasurer; George M. Schmeltzer, executive director; A. E. Upton, retiring president; Stanford C. Seiple, president-elect and Paul E. White, vice president-elect.



Connecticut State Chapter Officers Elected for 1953

Seated, left to right, Chester W. Moore, Torrington Bldg. Co., Torrington, director; William Noble, Jr., W. J. Megin, Inc., Naugatuck, vice president; A. J. M. Giardini, Associated Construction Co., Hartford, president-elect; Welton A. Snow, national A.G.C. staff; A. Scott Paterson, Paterson Construction Co., Inc., New Haven, past president and director; Frank P. Sullivan, Frank P. Sullivan, Inc., East Haven, director. Standing, left to right, Philip Epifano, E. & F. Construction Co., Inc.,

Bridgeport, director, Edward E. Bray, Edward E. Bray Co., Inc., Bridgeport, past-president; Earl C. Wheeler, Hartford, past-president; Walter A. Hubbell, S. W. Hubbell Building Co., Bridgeport, past-president and director; Burton W. Bartlett, Bartlett-Brainard Co., Hartford, past president; Albert D. Blakeslee, C. W. Blakeslee & Sons, Inc., New Haven, former national director, A.G.C. and C. F. Grisham, executive vice-president of the chapter. They were elected Oct. 13.

Conference of La. Council Votes Officers

• Hears Speakers Report on Condition of Construction Market

» THE FIRST conference of the Louisiana Council of A.G.C. Chapters, held in New Orleans Nov. 14-15, elected officers for 1953 and heard speakers report on the latest developments in the industry.

Some of the new officers, shown in the picture at right, are as follows: front row, left to right, A. B. McBride, Northeast Louisiana Chapter, vice president; Frank L. Miller, Lake Charles Chapter, president; R. J. Jones, Central Louisiana Chapter, retiring president; George Farnsworth, president of the New Orleans Chapter; and Horace B. Rickey, Central Louisiana, vice president.

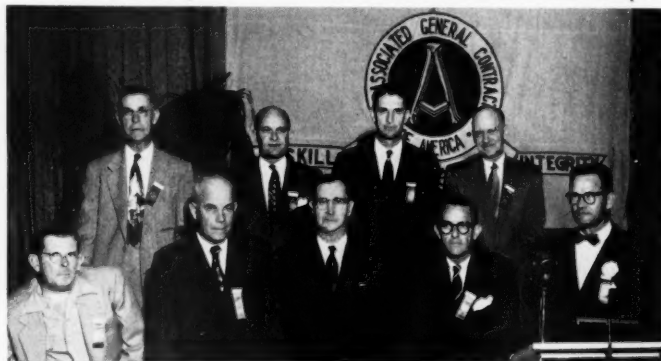
Back row, left to right: Henry Boh, New Orleans Chapter, vice president; Charles Beadles, Baton Rouge Chapter, vice president; G. W. James, Highway and Heavy Constr. Branch, vice president; and Donn Piatt, Shreveport Chapter, vice president. Other officers not shown in the picture are Frank A. Barber, Highway and Heavy Constr. Branch, treasurer; S. P. Eggers, Jr., Central Louisiana Chapter, secretary, and Ed McKeever, executive director.

The first day of the conference began with a general council meeting followed by individual meetings of the building group and the highway-heavy group.

In the evening a banquet was given at which Mayor of New Orleans de Lesseps Morrison gave the welcoming address to the conference. W. Murray Werner, national director of the A.G.C., followed with a report on the national construction picture.

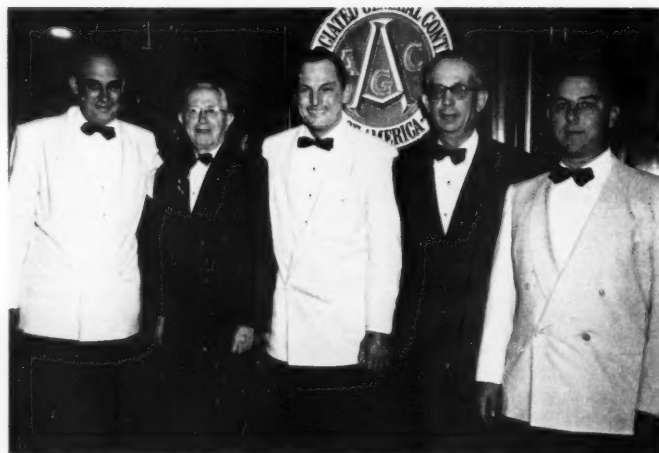
President Miller addressed a meeting of the combined groups citing ethical bidding procedures. Ed McKeever also related the activities of the council for its first 10 months. Duke C. Dorney, vice president, Maryland Casualty Co., Baltimore, spoke on the "Various Types of Contractors' Insurance," and R. Emmet Kerrigan, New Orleans attorney, discussed legal matters of interest to general contractors.

The conference met in the Roosevelt Hotel with some 150 members attending the business meetings and over 250 members and wives at the banquet.



Carolinas Meet, Bermuda Cruise Combined

• H. E. Foreman Speaks to Members; Cowper New President



Carolinas 1953 officers, left to right: Raymond A. Bryan, Goldsboro, N. C., director; Roy L. Goode, Charlotte, treasurer; M. R. Cowper, Kinston, N. C., president; G. E. Moore, Greenwood, S. C., vice president and C. P. Ballenger, Jr., Greenville, S. C., retiring president.

» THE CAROLINAS Branch, A.G.C., held its 32nd annual convention in a holiday atmosphere aboard the S.S. Queen of Bermuda bound for its island namesake in the Atlantic.

A.G.C. Managing Director H. E. Foreman outlined to the Oct. 25-30 meeting the responsibilities of the construction industry, which is now the largest in the nation in terms of business volume. He told members that supplies of materials appear to be favorable enough to demand removal of government controls, which are a drawback to the industry.

Association's Objectives

He also mentioned objectives of the association in legislation, joint committee work with allied groups and A.G.C.'s contribution to national defense represented by its sponsorship of 76 military reserve units, 21 of which are in active service.

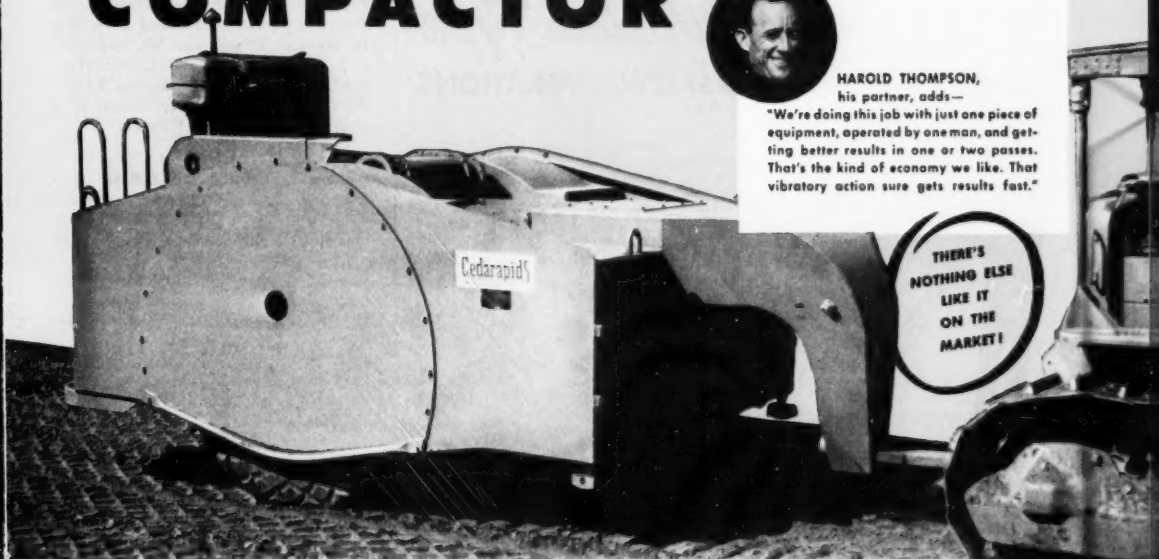
M. R. Cowper, Barrus Constr. Co., Kinston, N. C. was elected president for 1953, succeeding C. P. Ballenger, Jr., Ballenger Paving Co., Greenville, S. C. Mr. Ballenger is ex-officio for the coming year. Other officers in-

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OBTAINED IN TWO PASSES**

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DAN HOLLOWAY,
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says—



**"That's why we like
CEDARAPIDS EQUIPMENT"**

"That Cedarapids Compactor of ours really saved us money. It never took more than two coverages to get the required density, or better, and in some areas it took just one pass. Some difference from the old time-wasting way of continuous rolling and re-rolling."



HAROLD THOMPSON,
his partner, adds—

"We're doing this job with just one piece of equipment, operated by one man, and getting better results in one or two passes. That's the kind of economy we like. That vibratory action sure gets results fast."

In their work of compacting aprons and taxi-ways for the Detroit-Wayne Airport, Holloway & Thompson Construction Co. completed compaction of 225,000 sq. yds. of area in less than three weeks, in spite of delays due to rain! And on fills placed in 12" lifts, they obtained, and often exceeded, the specified 95% densities in just two passes, with their Compactor operating at 1150 vibrations per minute. Many areas showed a compaction of 105% and one test ran up to 108%.

Fast, low-cost compaction like this is the result of the *impact-compacting* action found only on Cedarapids Vibratory Compactors, which operate on an entirely new principle... the combination of weight and proper tire pressures with a powerful compacting vibratory thrust through the pneumatic tires. This positive, directed vibratory action pushes the soil straight down *without lateral displacement*, and the full weight of the 60,000-lb. Model 60 Compactor is slammed against the loose soil by the vibratory impact at a rate of 600 to 1400 times a minute. Soil particles are actually rearranged, forcing

out moisture and eliminating air voids to increase cohesion and mechanical bond. You can put in your fill in 12" to 36" lifts, depending on the material, and compact it right down to a firm foundation, usually in one or two coverages.

The newly designed heavy-duty vibrating mechanism on the Cedarapids Compactor is built for long-lasting service. Vibration is transmitted to the axle and tires only... there's no vibratory wear and tear on the rest of the machine. The rate of vibration can be varied, tire pressures changed and weights added or reduced to meet a wide range of soils, moisture conditions, etc. Excellent compaction can also be obtained when the Compactor is used as a static roller.

Cedarapids Vibratory Compactors are available in two sizes, the 60,000-lb. Model 60 and the 25,000-lb. Model 25. See your Cedarapids distributor today for complete details about the best size to save time and money on your compacting jobs.

WRITE FOR BULLETIN COMP-3

It contains complete specifications and full details of this entirely new principle of compaction... weight plus vibration. Many typical job test reports are included. Send for your copy today!

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clude G. E. Moore, G. E. Moore Co., Inc., Greenwood, S. C., vice president; Roy L. Goode, Goode Constr. Corp., Charlotte, treasurer and Robert Patten, also of Charlotte, managing director.

Year's Activities Reviewed

At the opening of the general session, Mr. Ballenger reviewed the important activities of the chapter for

the past year, many of which will be continued in 1953, including resistance to North Carolina's using state forces on federal-aid highway projects.

Mr. Ballenger also described national legislation planned to offset last year's Wunderlich case ruling by the Supreme Court, cooperation between the Carolinas Branch and engineering and architectural organizations, apprentice training programs and sup-

port to North Carolina State College in its construction course.

The chapter's associate member division discussed ways by which members could play a larger part in the affairs of the organization. The meeting voted to reduce its advisory board from 10 to five members on the theory that it would be more effective.

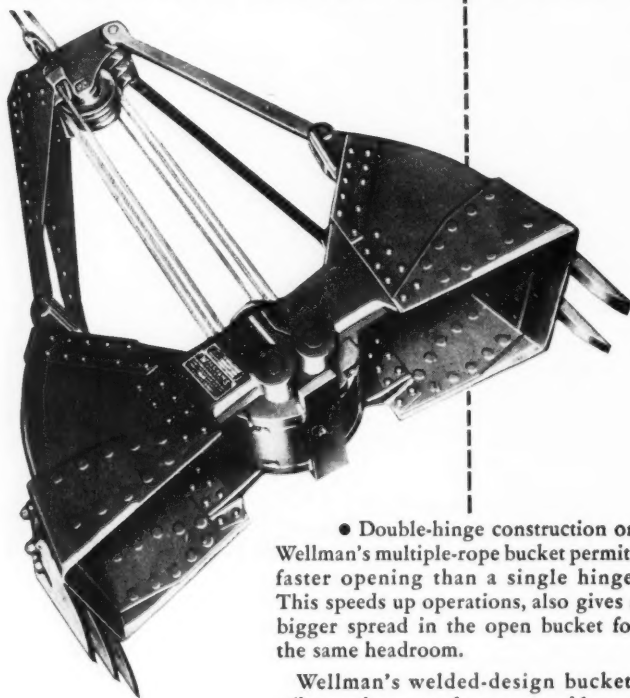
Special Guests

Among the special guests on the cruise in addition to Mr. and Mrs. Foreman were President-elect C. P. Street, Charlotte, Mr. and Mrs. Ira H. Hardin, Atlanta and Mr. and Mrs. J. L. Ewell, Lakeland, Fla. Mr. Hardin is a member of the national A.G.C. Advisory Board and Mr. Ewell is a district director from Florida.

A.G.C. Branch and Chapter Meetings

- Dec. 11. MEMPHIS CHAPTER. Memphis. A.G.C. Building.
Dec. 12. SOUTH TEXAS CHAPTER. Corpus Christi. Plaza Hotel.
Dec. 14. SAN ANTONIO CHAPTER. San Antonio. 227 Transit Tower.
Dec. 17. A.G.C. OF MASSACHUSETTS. Boston. Hotel Touraine.
Jan. 7-8. A.G.C. OF IOWA. Des Moines. Hotel Savery.
Jan. 7-8. A.G.C. OF MISSOURI. Kansas City. President Hotel.
Jan. 8. BALTIMORE BUILDERS CHAPTER. Baltimore. Park Plaza Hotel.
Jan. 8. SAN DIEGO CHAPTER. San Diego. El Cortez Hotel.
Jan. 9-10. INTERMOUNTAIN BRANCH. Salt Lake City. Hotel Utah.
Jan. 9-10. MONTANA CONTRACTORS' ASSN., INC. Butte. Hotel Finlen.
Jan. 9-10. MONTANA BUILDING CHAPTER. Butte. Hotel Finlen.
Jan. 10. A.G.C. OF DELAWARE. Wilmington. Hotel DuPont.
Jan. 10. OKLAHOMA BUILDERS CHAPTER. Oklahoma City. Skirvin Hotel.
Jan. 12. PORTLAND CHAPTER. Portland. Multnomah Hotel.
Jan. 13. MASTER BUILDERS ASSN., INC. District of Columbia. Mayflower Hotel.
Jan. 14. PHILADELPHIA CHAPTER. Philadelphia. The Barclay.
Jan. 15-16. KANSAS CONTRACTORS ASSN. Kansas City. President Hotel.
Jan. 15-16. VIRGINIA BRANCH. Roanoke. Hotel Roanoke.
Jan. 16. ALABAMA BRANCH. Birmingham. Tutwiler Hotel.

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• Double-hinge construction on Wellman's multiple-rope bucket permits faster opening than a single hinge. This speeds up operations, also gives a bigger spread in the open bucket for the same headroom.

Wellman's welded-design buckets offer you better performance and longer service. In all types and sizes you'll do better with Wellman!

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CHAPTERS • BRANCHES

- Jan. 16. MILWAUKEE CHAPTER. Milwaukee. Schroeder Hotel.
 Jan. 16. MOUNTAIN PACIFIC CHAPTER. Seattle. Benjamin Franklin Hotel.
 Jan. 17. MISSISSIPPI VALLEY FLOOD CONTROL BRANCH. New Orleans. Hotel Roosevelt.
 Jan. 19. NEBRASKA BUILDING CHAPTER. Omaha. Hotel Fontenelle.
 Jan. 19. NEBRASKA CHAPTER. Omaha. Hotel Fontenelle.
 Jan. 19-20-21. PIPE LINE CONTRACTORS ASSN. Houston. The Shamrock.
 Jan. 29-30-31. A.G.C. OF MINNESOTA. Minneapolis. Radisson Hotel.
 Jan. 30. CENTRAL CALIFORNIA CHAPTER. San Francisco. St. Francis Hotel.
 Jan. 30. IDAHO BRANCH. Boise. Hotel Boise.
 Jan. 30-31. COLORADO CONTRACTORS ASSN., INC. Denver. Shirley-Savoy Hotel.
 Feb. 10. TACOMA CHAPTER. Tacoma. (Not Selected)
 Feb. 11. LOUISVILLE CHAPTER. Louisville. Chapter Building.
 Feb. 12. CONSTRUCTORS ASSN. OF WESTERN PENNSYLVANIA. Pittsburgh. Hotel William Penn.
 Feb. 13. KANSAS CHAPTER, BUILDERS DIVISION. Wichita. Hotel Lassen.
 Mar. 11. HOUSTON CHAPTER. Houston. Ben Milam Hotel.
 April. BUFFALO CHAPTER. Buffalo. (Not Selected)

Tentative Dates

- Jan. 5. ASSN. OF OKLAHOMA GENERAL CONTRACTORS. Oklahoma City. Huckins Hotel.
 Jan. 14. SOUTHERN CALIFORNIA CHAPTER. Los Angeles. Statler Hotel.
 Jan. 16 or 23. A.G.C. OF WEST VIRGINIA. Charleston. Daniel Boone Hotel.
 Jan. 21. DETROIT CHAPTER. Detroit. Detroit Athletic Club.
 Jan. 27. SOUTH FLORIDA CHAPTER. Coral Gables. Coral Gables Country Club.
 Feb. KENTUCKY HIGHWAY DIVISION. Louisville. Kentucky Hotel.
 Feb. MICHIGAN CHAPTER. (Not Selected)
 Feb. or Mar. METROPOLITAN BUILDERS ASSN. OF NEW YORK CITY. New York. (Not Selected)
 Mar. CINCINNATI CHAPTER. Cincinnati Club.
 June. TEXAS HIGHWAY BRANCH. Austin. Austin Hotel.



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GO FURTHER**



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Where new records
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PROBLEM: To select batching equipment of speed, accuracy and ultra portability to put paving operations on a much faster schedule than ever attained.

ANSWER: After charging as high as 140 batches per hour on an airport project this batching operation was moved to the Pennsylvania Turnpike where this high production was maintained.

Heltzel Type One for aggregates and Type E2 for bulk cement were set in line for continuous truck drive-through. Using dual batchers, 2-batch trucks were loaded in one stop and 3 and 4-batch trucks in only two stops.

Type One—Capacities: 52, 72, 85 and 100 tons; used with 1 1/4-cu. yd. Universal Batchers or 2 1/2-cu. yd. Dual Batchers.

Type E1*—Capacities: 100 and 200 bbls.

Type E2*—Capacities: 300 and 400 bbls.

*Used with 14-cu. ft. Dustless and 28-cu. ft. Dual Dustless Batchers.

Capacities may be increased with hopper extensions and recirculating tanks.



The Heltzel Steel Form & Iron Company

Construction Equipment Since 1910



WARREN, OHIO

The Name

HOPE'S Guarantees

Lok'd Bar FACTORY SASH

The strongest factory sash you can buy. "Lok'd Bar" design gives greater strength for its weight of metal. Stronger construction increases resistance to wear, tear and corrosion. Saving in upkeep cost, trouble-free operation and saving in heat losses more than return its small added cost to the owner.

Broad, double contacts on accurate surfaces abolish drafts, save heat. Weathering flanges have no tacked-on strips to corrode and break loose.

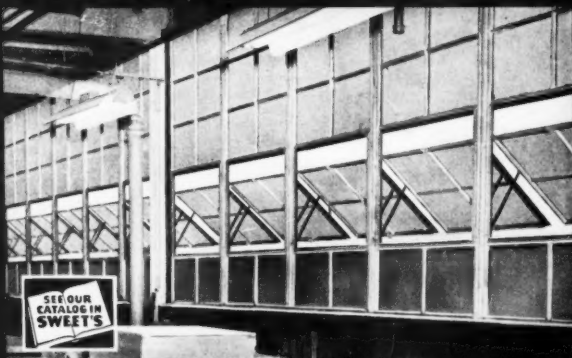
Engineers like "Lok'd Bar's" extra safety in window walls. Builders find labor savings in installation. Look into Hope's "Lok'd Bar" sash for every good industrial building. Hope's Engineering Department will assist you with detail of window design and installation. Ask for this help!

The bulb tee makes the strongest vertical sash bar.

The flat tee muntin totally replaces the steel pierced from the upright — making "Lok'd Bar" the strongest sash joint.

Corners solid-welded, each ventilator frame and casement reinforces the sash, withstands wind and shock for the life of the building.

Projected ventilator, balanced on strong steel arms with brass guides held in true position. (Pivoted ventilators are balanced on solid bronze cup pivots.)



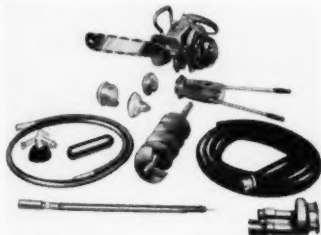
"Lok'd Bar" means the world's finest factory sash. Ask for Catalog 103L

HOPE'S WINDOWS, INC., Jamestown, N. Y.

The Finest Buildings throughout the World are Fitted with Hope's Windows

NEW EQUIPMENT • MATERIALS

Saw and Attachments—Mall Tool Co., 7703 S. Chicago Ave., Chicago 19. New 29-lb. 2 MG is 5 h.p. combination gasoline engine and chain saw. Attachments convert saw to earth auger, wood drill using $1\frac{1}{4}$ " to $3\frac{1}{4}$ " chucks, concrete vibrator, concrete surfacer or sump pump handling about 5,000 gal. per hour.



Mall 2 MG saw and attachments

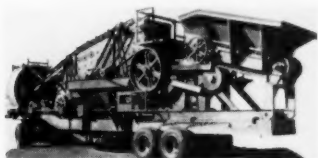
Hoist—Coffing Hoist Co., Danville, Ill. Model R coil-chain ratchet-lever hoist operates on Coffing ratchet and pawl principle, with load suspended on ratchet and pawl at all times. Coil permits chain to swing or wrap in any direction. Handle, which operates in any position, can be operated with partial or full strokes. Safety stops prevent spinning of handle. Hoist is available in 1,500- and 3,000-lb. capacities.

Pump—Gardner-Denver Co., Quincy, Ill. Model CAY reversible centrifugal pump is designed for circulating cooling water in air compressors, diesel and gasoline engines and other water-cooled machines. It can be installed in any position on machine. It is suitable for heads up to 50' and capacities up to 67 gals. per minute. It is fitted with 2 pre-lubricated ball bearings and has mechanical seal to prevent stuffing box leakage.

Scalping Screen—Deister Machine Co., 1933 E. Wayne St., Fort Wayne, Ind. UHS heavy-duty scalping screen has unitized head motion, featuring 2-bearing construction and running in bath of oil. Screen features opposed elliptical-throw action. At input end, material is thrown by elliptical throw to discharge end to increase stratification of load under input chute. Near center of screen, throw becomes circular and below center it reverses to holding action, retaining thinned bed of coarser material on screen long enough to permit maximum grading.

NEW EQUIPMENT • MATERIALS

Crusher—Universal Engineering Corp., 625 C Ave., N.W., Cedar Rapids, Iowa. New addition to 293QH series limerock plants is designed for 100% crushing. It has 18" x 30" roller-bearing jaw crusher, 18" x 31" hammer mill and 4' x 10' 3-deck gyrating screen with ball tray. Special by-passes are built in to give product control, making it possible to produce aglime, road rock and chips, simultaneously, aglime and chips, aglime and road rock or all aglime. Primary jaw crusher, apron feeder with by-pass, operator's platform and structural supports are mounted as separate unit on skids which is bolted to main frame.



Universal Engineering Corp.'s new limerock plant

Gypsum Wallboard—United States Gypsum Co., Chicago 6. New "Sheetrock" gypsum wallboard products are designed to meet special fire code requirements. "Sheetrock Firecode 60" and "Sheetrock Firecode 45" introduce $\frac{5}{8}$ " and $\frac{1}{2}$ " thicknesses that have 60-minute and 45-minute fire-resistance rating, respectively, when used on ordinary partition framing or with floor and ceiling constructions that combine joists, sub-flooring and finished flooring.

Floodlight and Power Supply Unit—Winpower Mfg. Co., Newton, Iowa. 5,000-watt "Nite-Hawk" unit consists of Winpower 5 k.w., 115-volt AC generator, powered by Wisconsin 4-cylinder air-cooled engine. Four 80,000-candlepower floodlights are mounted on unit. They can be raised to $8\frac{1}{2}$ ' and aimed in any direction. Operating equipment includes lighted control panel with duplex receptacles for power tools, for emergency power needs or extensions to separate flood lights; fused circuits; rheostat voltage regulator; automatic circuit breaker; separate switches for each light; 2 built-in, side-mounted tool boxes. Unit is mounted on 2-wheel pneumatic-tired trailer with heavy-duty, multiple-leaf steel springs and retractable caster wheel for parking.

TWO GREAT VIBRATORS FOR GENERAL CONCRETE CONSTRUCTION!



Model FS-6A. Now furnished with a 6 H.P. engine, providing plenty of reserve power under all conditions, and vastly improved power take-off. Vibrator frequency (up to 7500 VPM) and amplitude are carefully balanced for maximum progress and thorough consolidation. It is available with 3 vibrator heads, for thick or thin sections. Shafting is furnished in 7' and 14' lengths up to 28'. Quickly adaptable to concrete rubbing, wet or dry, and drilling. Built to stand severe usage. By any comparison, it's the finest engine-driven vibrator on the market and the best buy! Complete details on request.

The POWERFUL, LIGHTWEIGHT JACKSON ELECTRIC VIBRATOR



2 1/4 H.P. MOTOR. FAST — RELIABLE

Has more than ample power for uninterrupted placing of the stiffest mixes, even when using the maximum length of shaft (28'). Provides 8,000 to 10,000 VPM. Built for trouble-free service.

PLUGS INTO LAMP SOCKET

Wherever 115 volt, 60 cycle, single-phase AC or DC is available.

EXTREMELY HANDY

May be had with any length of shaft up to 28' and choice of 3 vibrator heads. And since it weighs but 50 lbs. it is ideal for thin or thick sections, high places and reaching those otherwise difficult-to-get-to spots. Also ideal for incasing structural members and similar applications.

QUICKLY ADAPTABLE TO CONCRETE RUBBING

Wet or dry, and drilling. A relatively inexpensive vibrator that will do a whole of a job.

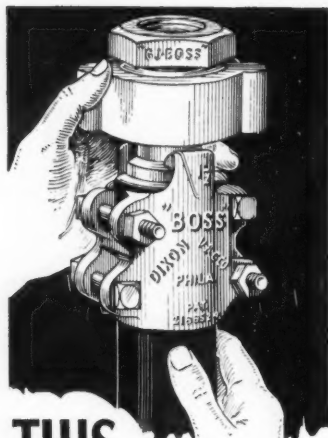
VIBRATORS FOR ALL PURPOSES —

FOR SALE OR RENT

at your Jackson Distributor. Mass concrete placement, highway, airport, and municipal paving. Asphalt and Soil Compaction. Power Plants.



ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Mich.



THIS Washerless COUPLING

has no equal for efficiency, durability and safety in every high or low pressure hose service . . . steam, water, gas, air, oil, hydraulic. Ground joint union between stem and spud provides leakproof, trouble-free seal. Furnished with super-strong, "Boss" Offset and Interlocking Clamp.

"GJ-BOSS"
GROUND JOINT
FEMALE COUPLING
STYLE X-34

All parts steel or malleable iron, thoroughly rustproofed. Sizes 1/4" to 6", inclusive.

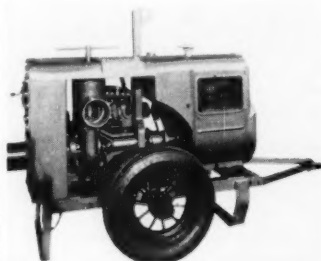
Stocked by Manufacturers and Distributors of Industrial Rubber Products

DIXON
Valve & Coupling Co.

GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA.
BRANCHES—CHICAGO—BIRMINGHAM—LOS ANGELES—HOUSTON
DIXON VALVE & COUPLING CO., LTD., TORONTO, Associate Companies.
Dixon Valve Company, Inc., Quakertown, Pa. • Philadelphia Steam Steam Company, Camden, N. J.

NEW EQUIPMENT • MATERIALS

Wellpoint Pump—Foundation Equipment Corp., 38th Ave. at 10th St., Long Island City 1, N. Y. Portable gasoline-engine-driven pump, Model 646, has capacity of 1,000 gal. per min. Vacuum pump displacement is sufficient to provide positive prime at all times and even flow. Engine does not have to be run at high speeds to keep prime. Model 646 can also be used as sump pump with special strainer which prevents foreign materials from entering centrifugal pump. Pump is 98" long, 63" high, 47" wide and weighs 1,580 lbs.



Foundation Equipment Corp.'s wellpoint pump

Rollers—Huber Manufacturing Co., Marion, Ohio. New line of 8-12- and 10-14-ton tandem rollers feature yoke design which is intended to prevent "scuff" or "rut" on finish courses caused when guide roll lags as tandem stops to reverse direction. Yoke design makes it possible to adjust tapered roller bearings at kingpin, yoke swivel pin and roll axle, so that any looseness which develops can be corrected immediately. For servicing, all parts of rollers are accessible through inspection plates and dust covers. Rollers have unit-welded frames. Final drive is machined into frame in positive center alignment. Power is transmitted through Twin-Disc fluid coupling. Choice of gasoline or diesel engines is offered. Compression of 8-10-ton tandem drive roll is 278 lbs. per lineal inch and that of 10-14-ton is 326 lbs. per lineal inch.

Safety Goggles—United States Service Co., 1215 McGee, Kansas City 6, Mo. "Saf-I-Flex" plastic goggles have frame of pliable Vinyl with rolled edges where it contacts face. Grid ventilation makes them fog-free. Lens, which can be quickly changed, locks into frame channel at 7 points. Goggles weigh 1.7 oz.

The Same Reliable Source

FOR INSURANCE PROTECTION HERE

Insured by Fire Association since 1874, the University of Pennsylvania Hospital has recently added the new Thomas Jefferson Memorial Pavilion.



FOR CONTRACT BONDS ON YOUR NEXT JOB!



Note the three important advantages in getting your Contract Bonds through companies with the stability and financial strength of Fire Association-Reliance.

- 1 The use of our preferred rates is very much to your advantage in preparing your bids.
- 2 Our service facilities guarantee greatest speed in delivery of bid and performance bonds.
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The Fire Association of Philadelphia has a reputation for reliability in providing insurance protection that goes back 135 years. Today you can count on equally reliable service from the Fire Association-Reliance Companies in getting Contract Bonds for your next job. Contact your local Fire Association or Reliance agent now, or write us direct, and we'll have him call you. Remember that he's a good man to see about your Property Insurance, too.

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INSURANCE COMPANIES OF PHILADELPHIA

Property and Casualty Insurance
Surety Bonds

NEW EQUIPMENT • MATERIALS

Loader-Dozer-Crane—*Oliver Corp., 19300 Euclid Ave., Cleveland 17.* Wheel tractor with "Strait-line" loader is unit which digs at either end, swings load overhead and loads in front. With bulldozer, angled dozer blade mounted on "Strait-line," tractor is ready for dozing, carrying loaded bucket in rear. Loader bucket may be removed and replaced with crane which can operate at either end of tractor.



Oliver wheel tractor with "Strait-line" loader

Tarpaulin—*Canton Containers, Inc., 1101 9th St. S.E., Canton 2, Ohio.* "C-Line" tarpaulins are made of Visqueen film and are light-weight, water- and mildew-proof, transparent and do not absorb paint or liquids.

Screw Anchor—*Super-Grip Anchor Bolt Co., 3333 N. 22d St., Philadelphia 40.* Steel and lead anchor for use in attaching machine screws, stove bolts or wood screws to brick or masonry, consists of threaded insert, lead sleeve and cup-shaped fluted steel anchor. When driven into place, lead mushrooms out and steel anchor collapses, forcing sharp edges into masonry and threaded component. Tamping tool to mushroom lead sleeve and flatten steel anchor, and blow tube to remove dust and dirt from masonry hole are provided with anchors.

Crusher—*Pioneer Engineering Works, Minneapolis 13.* Light-weight 10" x 16" plain bearing jaw crusher features single wall pressed steel base. Pitman bearing is full round bronze sleeve bearing. Side bearings are bronze on bottom half and babbitt on top half. Bearings are protected by felt oil seals in each end of each bearing. Reversible jaw plates are of manganese steel. Production capacity ranges from 4 to 40 tons per hour, depending on stage of reduction required. Approximate weight is 3,350 lbs.

Multiply Your Bridge Bid Chances | By 3

With Armco MULTI-PLATE Structures you have three good chances to be awarded small bridge jobs.

Whether the proposed bridge is for a new installation, replacing a worn-out bridge, or relining existing structures, you can figure the job with Armco MULTI-PLATE Pipe, Arch, and PIPE-ARCH. One of these will prove best for the particular bridge problem—in cost and application.

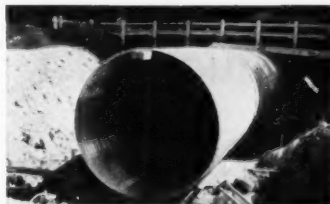
All three have cost-saving features in common. Each is assembled from pre-curved, corrugated metal sections that are bolted together on the site to form sturdy, full-round pipe, arch or PIPE-ARCH. There is no curing or delay. Handling is easy and the job is done quickly with a small unskilled crew. Installation costs are kept low. These advantages encourage job-getting bids that include a good profit for you.

For smaller drainage installations figure on using Plain Galvanized Armco Corrugated Metal Pipe, PAVED-INVERT Pipe, ASBESTOS-BONDED Pipe, or PIPE-ARCH. All offer installation economies. Write for details. Armco Drainage & Metal Products, Inc., 1702 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

NEW BRIDGE installations may require MULTI-PLATE PIPE-ARCH, because of limited headroom.



REPLACING worn-out bridges with Armco MULTI-PLATE Pipe frequently can be done without detouring traffic.



RELINING existing structures is often made-to-order for an Armco MULTI-PLATE Arch. A tight fit is easy.



ARMCO
DRAINAGE STRUCTURES



NEW LITERATURE

Steel Bars—Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80. *Guide to Steel Selection* covers in condensed form characteristics, mechanical properties and uses of list of hot-rolled and cold-finished carbon and alloy steel bars. It is designed to provide easy comparisons of different types and serve as guide to selection of most suitable qualities of bar steel for different jobs.

Tractors, Scrapers, Graders—Caterpillar Tractor Co., Peoria 8, Ill. DW21 tractor and No. 21 scraper are presented in booklet (Form 30503) titled *Big Producer*. Action pictures and descriptions show equipment in use by contractors in United States and Canada. It is shown loading, hauling, dumping and turning. Operating characteristics are given. . . . *Controlled Earthmoving* is title of

booklet (Form 30529) on motor graders Nos. 12, 112 and 212. On-job photos show them working on highways, dams and airports.

Engine Attachments, Generator Sets—Caterpillar booklet, *Attachments for Your Caterpillar Diesel Engine* (Form 30338) pictures and describes attachments and shows where they are used and what they do. It starts with engine base and concludes with discussion of exhaust devices. . . . Diesel electric generator set combinations to meet varied power needs are presented in booklet, *Generating Power and Profits* (Form 30249).

Wire Rope—A. Leschen & Sons Rope Co., 5909 Kennerly Ave., St. Louis 12. *Wire Rope Handbook* contains descriptions, diagrams and illustrations of wire rope types and constructions, as well as information about lubricants, working loads, safety factors and specifications. Charts give breaking strengths and weights of wire rope by constructions and sizes, along with calculations for proper selection of attachments.

Grader—The Galion Iron Works & Mfg. Co., Galion, Ohio. Model 118 heavy-duty motor grader is presented in Catalog 375. Illustrated with action photos and detailed views of construction and operating features, it shows hydraulic control system, all-gear 4-wheel tandem drive, constant-mesh transmission and combination manual and hydraulic booster steering.

Excavators—The Shovel Co., Lorain, Ohio. Booklet presents Lorain TL-25, 41, 50, 79-80, 820 series and MC-524 "Moto-Crane." Features of each machine are described and illustrated and mountings offered are shown.

Trencher—Cleveland Trencher Co., 20100 St. Clair Ave., Cleveland 17. Model 95 trencher is presented in new bulletin. Job applications and outstanding features of machine are shown. Center spread is detailed study of design, materials and construction. Information is given on component parts. On-job photos show machine working on all types of trenching projects. Complete dimensions and specifications are given, including tables of optional trench widths and digging wheel and traction speed combinations.

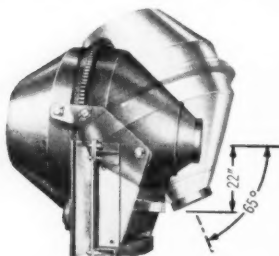
WANTED!

General Manager for construction office in Alberta, Canada, doing about four million dollars (\$4,000,000.00) per annum in buildings and industrial work.

Give complete history of employment, references, photograph, and salary expected. Box No. 12A, The Constructor, Inc., 1227 Munsey Building, Washington 4, D. C.

Burmeister "TILT-UP" MIXER CUTS PLANT HEIGHT AS MUCH AS 8 FEET

Burmeister's patented "tilt-up" feature—which reduces the mixer's headroom requirement—permits lower plant heights. This means easier crane loading, lower power costs, lower initial costs, less costly "conversions," increased portability, and better over-all control.



● In addition to reducing plant height, Burmeister's 3 cu. yd. "Tilt-Up" Mixer (left) provides a steeper 65° discharge from one spot, eliminates segregation of concrete and the danger of accidental discharge. It is simple to install, and has an integral hydraulic system—no compressor is required. Write for name of your nearest Burmeister Distributor, without obligation.

SEND FOR FREE CATALOG

Your copy of Burmeister's new illustrated Catalog is now available. Write today!



COMPLETE PLANTS FROM A SINGLE SOURCE

Burmeister

L. BURMEISTER CO., 4535 W. MITCHELL ST., MILWAUKEE 14, WISCONSIN



NEW LITERATURE

Pumps—Rice Pump and Machine Co., Grafton, Wis. Bulletin 52 gives details and specifications on line of self-priming centrifugal pumps from 2" 7,000 g.p.h. size to 4" 40,000 g.p.h. size. Mounting options are shown.

Mixers—Kwik-Mix Co., Port Washington, Wis. Reference table compares features, dimensions and capacities of 3 new plaster-mortar mixers, 2 6-cu. ft. models and one 3-cu. ft. model. It shows re-design of 6-P tilting and non-tilting mixers to side discharge.

Air-Entrained Concrete—A. C. Horn Co., 10th St. and 44th Ave., Long Island City 1, N. Y. Booklet on "ayr-trap," air-entraining agent developed by Horn, discusses effects of entrained air in concrete, factors affecting amount of entrained air, advantages in mass concrete and in manufactured concrete products. Tables present results of tests of "ayr-trap" for compressive and flexural strength, bonding tests, bleeding tests, freezing and thawing tests.

Pumps—Marlow Pumps, Ridgewood, N. J. Revised Bulletin G-52 covers complete line of pumps. Pictures of representative units and general descriptive matter covering each type of Marlow pump are included.

Hoists—Galion Allsteel Body Co., Galion, Ohio. Series of 15 technical data bulletins describe complete line of Galion hydraulic hoists. Each bulletin gives full specifications. Included are hoist type, weight, stroke, cylinder diameter, mounting height, dump angle and piston rod diameter. Bulletins are illustrated with close-up hoist photos and application pictures. Hoist capacity reference tables are included.

Fireproof Constructions—Metal Lath Manufacturers Assn., 636 Engineers Bldg., Cleveland 14. Eighty-five types of fireproof constructions are described in *Summary of Metal Lath and Plaster Fire Resistive Ratings*. It includes fire protection information for steel columns, girders and trusses, joists, floors and partitions.

Shovels, Truck-Crane—Gar Wood Industries, Inc., Findlay, Ohio. Catalog on Models 75A and 75B shovels and 75BT truck crane describes in detail construction and operational features of machines.



Consult **BLAW-KNOX FIRST**

before your plans are drawn on engineered construction jobs

• **EVEN BEFORE** the plans are drawn . . . before the blueprints are made on your next engineered construction job, call in Blaw-Knox engineers for the expert consultation service that assures lower concrete placing costs.

Blaw-Knox engineers are backed by over 40 years experience in solving tough or unusual concreting problems. They are trained to get to the core of your problem and find the simplest, least costly method of solving it. They can suggest operating procedures to speed the job, or cut down the necessary number of operations. They will recommend the most efficient forms for the job and help you estimate your bids.

Whatever your concreting problems—dams, tunnels, bridges, even small sewers—take advantage of the Blaw-Knox engineering service *before* you start to plan. Write, wire or phone for information.



Preliminary planning
plus **BLAW-KNOX STEEL FORMS**
saved one costly concreting operation

• This big tunnel job is a typical example of how early consultation pays off. Blaw-Knox engineers showed the contractor how to combine the collapsible Steel Forms to permit concreting of side walls and roof arch in one operation. One step in construction was saved, and the necessity of using an expensive copper water stop was eliminated.

WRITE FOR BULLETIN 2035

Get complete details about Blaw-Knox Steel Forms and the consultation service that is available to any contractor without obligation.



CONSULTATION SERVICE BY **BLAW-KNOX**

BLAW-KNOX DIVISION of Blaw-Knox Company
2101 Farmers Bank Building, Pittsburgh 22, Pa.

NEW YORK • CHICAGO • PHILADELPHIA • BIRMINGHAM • WASHINGTON • SAN FRANCISCO

Pipe—Armco Drainage & Metal Products, Inc., 2280 Curtis St., Middletown, Ohio. Revised edition of booklet on foundation pipe covers pipe shells, pile shells and caissons. It deals with sizes, end preparation, mill service, field advantages and contains specifications and tables on dimensions and properties of spiral welded pipe piles as well as data on "Hel-Cor" pile shells.

Joint-Sealing Compound—The Flintkote Co., 30 Rockefeller Plaza, New York 20. "Flintseal" rubber asphalt hot-poured joint-sealing compound for concrete pavements is presented in leaflet I-H 601. Illustrations show specialized equipment used for melting and pouring "Flintseal" and methods and machines used in cleaning and preparing joints for sealing.

E. D. Tull has been named vice president and general manager of CUMMINS ENGINE Co. C. R. Boll, Jr., has been appointed general sales manager. C. B. Foster is sales manager—engines.

E. C. Berg, G. Johnston and M. A. Buntrock have been elected directors of MACWHYTE Co. Mr. Berg was appointed vice president and controller, Mr. Johnston, treasurer and assistant secretary, Mr. Buntrock continues as secretary and assistant treasurer.

INTERNATIONAL HARVESTER Co. has acquired the stock of THE FRANK G. HOUGH Co. Effective November 1, Hough became a wholly owned subsidiary of International. No immediate change is planned in the present Hough organization.

MARQUETTE CEMENT MANUFACTURING Co. announces that during 1953 it will spend more than \$2,250,000 on major improvements at 5 plants. Capacity increases are planned at Cape Girardeau, Mo. and Cowan, Tenn., producing plants and new packing plants will be built at St. Louis, Memphis and Nashville to replace obsolete facilities.

J. B. Diepenbrock has been appointed manager of new marketing research department of MARLOW PUMPS.

O. H. Gosswein, technical service manager in Chicago for UNIVERSAL ATLAS CEMENT Co., is retiring after 35 years' service with company. Robert H. Clore, technical service engineer since 1939, succeeds him.

Vernon Mandt has been appointed sales manager of the BUSHWACKER DIVISION of AMERICAN STEEL DREDGE Co. Mr. Mandt was formerly sales manager of Mandt Mfg. Division of Pettibone-Mulliken Corp. Prior to that he was regional manager for Jaeger Machine Co.

Opening of special factory training courses in servicing its earthmoving equipment is announced by THE EUCLID ROAD MACHINERY Co. Courses will be conducted from November to early spring with each course lasting one week. Complete enrollment information is available from Service Training, The Euclid Road Machinery Co., Cleveland 17, or from Euclid distributors.

as the roof goes UP...
the cost comes



Mail Handling Facilities Building
Terminal Railroad Assn., St. Louis, Missouri
Contractor: H. B. Deal & Co., Inc.

with LACLEDE STEEL JOIST PURLINS

When high-strength—yet lightweight construction is needed—consider the advantages and ultimate lower cost of Laclede Steel Joists. They provide the maximum strength per pound of steel used. They place and erect quickly—are adaptable for use with all types of roofing.

Specify these Laclede Products for your construction needs:

- Multi-Rib Reinforcing Bars • Steel Pipe • Welded Wire Fabric • Form and Tie Wire • Spirals • Conduit • Corrugated Steel Centering • Electrical Weld and Gas Tubing.



LACLEDE STEEL COMPANY

St. Louis, Mo.

Manufacturers' addresses are listed on page 74

Aggregate (Light-Weight)
Great Lakes Carbon Corp.
Building Products Division

Air Entraining Agents
A. C. Horn Co.

Air Lines
Brant International Airways

Asphalt Plants (Portable)
Barber-Greene Co.
Iowa Mfg. Co.
White Mfg. Co.

Axles (Truck)
Eaton Mfg. Co., Axle Division

Backfillers
Bucyrus-Erie Co.
Cleveland Trencher Co.
Gradall Division
Harnischfeger Corp.
Parsons Co.
Unit Crane and Shovel Corp.

Batchers
Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.

Bearings (Anti-Friction, Tapered Roller)
Hyatt Bearings Division
Timken Roller Bearing Co.

Bins
Blaw-Knox Division

L. Burmeister Co.
Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.

Bits (Detachable Drill)
Timken Roller Bearing Co.
Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)
Shunk Manufacturing Co.

Bridges
American Bridge Division
Armco Drainage & Metal Products

Buckets (Clamshell & Dragline)
Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Wellman Engineering Co.

Buckets (Concrete)
Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
Building Papers
Sisalkraft Co.

Buildings (Steel)
Allied Structural Steel Cos.
American Bridge Division
Armco Drainage & Metal Products
International Steel Co.

Macomber, Inc.
Truscon Steel Co.

Bulldozers
Bucyrus-Erie Co.
R. G. LeTourneau, Inc.

Car Pullers
Clyde Iron Works

Cement (Common and Special)
Lehigh Portland Cement Co.
Lone Star Cement Corp.
Marquette Cement Mfg. Co.
Universal Atlas Cement Co.

Cement (White)
Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)
Dixon Valve & Coupling Co.

Compressors
Allis-Chalmers Co.
LeRoi Co.

Concrete Curing Material
A. C. Horn Co.
Sisalkraft Co.

Concrete Mixers, Pavers, Tampers
Chain Belt Co.
Construction Machinery Co.
Foote Co.
Jaeger Machine Co.
Knickerbocker Co.
Koehring Co.

Kwik-Mix Co.
T. L. Smith Co.
Worthington Corp.

Concrete Vibrators
Concrete Surfacing Machinery Co.
Electric Tamper & Equipment Co.
Independent Pneumatic Tool Co.
Mall Tool Co.
Vibro-Plus Products, Inc.
White Mfg. Co.

Conveying Machinery
Barber-Greene Co.
Chain Belt Co.
Iowa Mfg. Co.
Link-Belt Co.

Cranes
Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.
Koehring Co.
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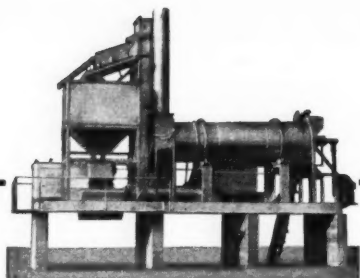
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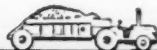
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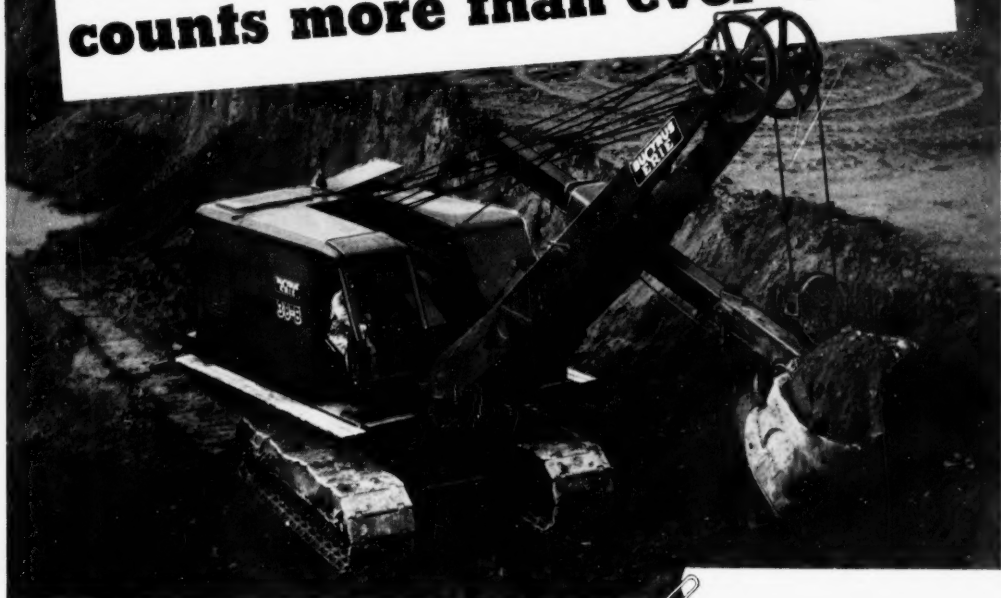
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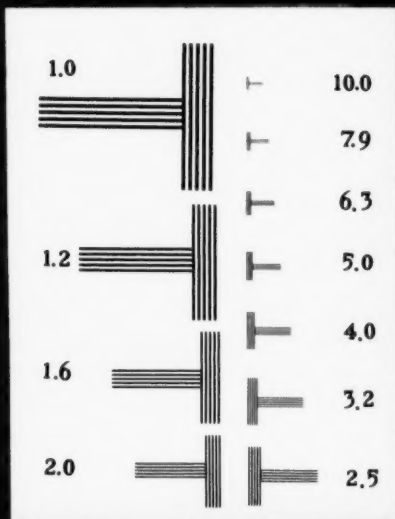
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RESOLUTION CHART



100 MILLIMETERS

INSTRUCTIONS Resolution is expressed in terms of the lines per millimeter recorded by a particular film under specified conditions. Numerals in chart indicate the number of lines per millimeter in adjacent "T-shaped" groupings.

In microfilming, it is necessary to determine the reduction ratio and multiply the number of lines in the chart by this value to find the number of lines recorded by the film. As an aid in determining the reduction ratio, the line above is 100 millimeters in length. Measuring this line in the film image and dividing the length into 100 gives the reduction ratio. Example: the line is 20 mm. long in the film image, and $100/20 = 5$.

Examine "T-shaped" line groupings in the film with microscope, and note the number adjacent to finest lines recorded sharply and distinctly. Multiply this number by the reduction factor to obtain resolving power in lines per millimeter. Example: 7.9 group of lines is clearly recorded while lines in the 10.0 group are not distinctly separated. Reduction ratio is 5, and $7.9 \times 5 = 39.5$ lines per millimeter recorded satisfactorily. $10.0 \times 5 = 50$ lines per millimeter which are not recorded satisfactorily. Under the particular conditions, maximum resolution is between 39.5 and 50 lines per millimeter.

Resolution, as measured on the film, is a test of the entire photographic system, including lens, exposure, processing, and other factors. These rarely utilize maximum resolution of the film. Vibrations during exposure, lack of critical focus, and exposures yielding very dense negatives are to be avoided.

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